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Thursday, September 2, 1982



Thursday, September 16, 1982 Number 826 35p

Computer Output Microfiche

Philips to try again on UK Satellite launch

AFFER a dismal first showing, full-blown P5000 word processing cularly for lists and tables. What is Philips is to have a UK relaunch of systems to which the Satellite is is good for is bulk text entry for its Satellite portable text entry ter- supposed to transmit text. Neither

last year, but so far only the communications was then blamed Canadian-built models have been on faulty minicassettes on which available. These lack, among other text is stored.

lems are more deep-rooted, and also criticises the machine. "One Alan Froat, 'general manager for cannot edit quickly enough on it. word processing at Philips has admitted that the company made a wind back through 30 lines of "pig's ear" of it in the market.

fBIS Systems, the US disc manu-

lion legal wrangle with Burroughs,

is to counter-sue the company, and is asking for up to \$85 million in

amages.

Ibis claims that Burrougha did

not fully investigate its case before

dleging that Ibis stole proprietary

information from Burroughs to

Ibis also claims that Burroughs,

which last year acquired IBM plug

demorex, is conspiring with

Memorex to stop Ibis competing in

The counter-suit calls Bur-

oughs' action "predatory and un-air" and adds that it breaches US

anti-trust legislation.

Ibis is claiming \$25 million in

compensation with an additional

compatible disc manufacturer

make its large scale disc systems.

inal this munth.

The Satellite was first launched fault and the problem of faulty

things, the pound sign.

About 150 of them have gone out to customers, with another 30 sitting on agents' shelves, and the "It's pretty, but it, doesn't work," said Rudiger Stubenrecht, editor of Textautomation, a German word processing publication.

company has hack orders for John Rose, proprietor of an Oxanother 100.

John Rose, proprietor of an Oxanother 100. However, the machine's prob- bureau called Daily Information,

Burroughs counter-sued for \$85m

\$10 million "exemplary damages". Under US anti-trust legislation

facturer at the centre of a \$20 million legal wrangle with Burroughs, amount originally claimed, hence capacity of IBM's 3380, up to 5

amount originally claimed, hence the \$85 million figure.

Burroughs bases its claim on the

lbis' employees are former Bur-

of the senior management and technical people.

Ibis contends that it did not

that nelther Burroughs nor

Memorex has actually announced a

Ibis is taking a different route from the other disc manufacturers

in its bid for the market. While the

others, including IBM, are em-ploying thin film heads and con-

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workers, including some

plained: "I hired a Satellite one weekend and entered about 30 pages of text but was horrified to find that I had lost it all on the Monday when I tried to transfer the text to a P5000.

"I kept getting a message on the display which said 'Communica-tions not established'. I tried about half-a-dozea other cassettes but

"pig's ear" of it in the market.
Engineering support for the machine is provided by different staff within the Philips organisa
poetry.

Philips promotes it ss an office machine for things like letters and mailing lists, but it is not much have under-utilised peripherals. targeted at companies which have P5000 systems which are likely to

they would not work," she said. But Philips is ignoring the market for one-off bureatt users and

Intersil feels the pinch of IBM price cuts

by Boria Sedacea IBM has put the squeeze on US semiconductor house Intersil and

lients with its own add-on Intersil supplies memory chips to the major plug-compatible manufacturers including Storage Technology, Memorex and Control Data, and unless it is now

in the market.
"IBM's 3033 memory price rehas faced since it announced its products in April 1982. In July the company settled out of court with ductions finally bring it in line Storage Technology, another with the cost of memory on the major IBM compstible disc supplier. STC alleged that its exemployees, who form a substantial tomers to upgrade their systems as full back-up to the larger memory capacity 308X machines at sites with multiple processors," said Suman Gambhir, European propart of Ibis' workforce, took trade secrets with them when they left to

duct marketing manager at Storage

Storage Technology has been

Ibis agreed to pay STC an undis-closed sum in settlement, and undertook not to recruit STC people unless they had left the company more than six months before Ibis'

The latest case is the second Ibis

32 Mbytes. "IBM is now encouraging users to move right up to 32 Mbyte installations," Gambts plug-compatible memory

IBM uses older 4K chips for 3033 processors and 16K chips packaged back-to-back in fours on the 308X processors, whereas Storage Technology was up to nuw able to undercut IBM by using 64K chips from Intersil. prepared to drop its prices some will no longer be able to compete

Another Intersil PCM memory supplier, Memorex, intends tu stay in the market, according to

Colin Keighley, regional man-ager of the OEM and peripheral products division of Control Data added that his company was expecting IBM's price cuts, "but nut so soon and not so severe.

WPs speed town hall work by up to 500%'-report by Nicholas Entleknap

WORD processors can itemize clerical work by between its al 500% according to the UK item

That is the conclusion darport* from Lamssc (Led : Authorities Management Series and Computer Committee) pt lished last week.

But the increased efficient nchieved with word process varies by application: s figure 300% is quoted for large mand and reports and 200% for men

tive letters.
The 44-page Lamsse bolts summarises the experience of Wilcoll authorities, of which Thu using word processors and I further 14% considering the Marther 14% considering

The findings have been diented and summarised in section of manpower and industrial rates implications, technical and two mic implications, and technic convergence. These are interest ing, but perhaps the greatenth will be derived from the line nistories which form the balts the book. These are presented in a redard format, and describe her

the future took a step forward with the launch last week of its own low-speed local network for its microcomputers. Earlier this year Racal released Planet, a mediumperience of each authority in r of the place of word prox speed proprietary LAN. within the aothority's The new product, Sharenet, will velopment strategy, the spiaccept up to 28 workstations from tions, the type of word proce an unlimited number of access and the number of staff involve points on a maximum cable length Word processing application is revernment 1982, available from LA of 500 metres, using simple Vincent House, Vincent Squar, IV SWIP 2NB. Tel: 01-828 2333. Post

triples.
The system is only for use with Racal's Series 6000 micros, launched last July as standalone machines, but may be connected eventually to Racal-Milgo's Planet network through a gateway node.

RACAL'S plans for the office of

Racal steps forward

Peter Hare, director of Racal pre-released the system to custom- date and time stamp.

with local micro net networks so far, some of which are existing Series 6000 users.

"The BBC has orders in eight networks and a total of 48 workstations, worth around £250,000, as part of the Department of Information's 'Office of the Future' scheme," be added. The first system was delivered isst week to Eastleigh College o

Technology, and the second will go to another college of technology students on office automation. been developed which maintain compatibility with the CP/M

microcomputer operating system.
Users can also share peripherals
such as printers and disc drives, "In addition DEC has been and are able to store and handle

Suppliers slam DEC over distribution

standard practice.

UK terminal suppliers have slam-med Digital Equipment's market,

Authorised distributors say they are being undercut by suppliers which are outside the scheme and facing cotopetition from DEC

DEC has admitted some of the charges but has hit back, saying the diatributors have not given the

programme time to sort itself out.
One complaint is that DEC has continued to sell terminals to unauthorized distributors even discussing its position with DEC. after the programme was introduced. Some suppliers put in big orders just before the five official distributors were named.

As a result they have been taking delivery of terminals at the prices at which they ordered them at the start of the year. Yet an suthorised distributor ordering over shorter periods has to pay any price increases which have been

"We've actually bought termi-nals from an unauthorised disubutor more cheaply than from DEC," said Terry Walker, managing director of Abacus Electronics one of the five authorised termina

competing with us on one-off sales. But they said they would refer orders for under 200 termi-

were normal in the distribution pusiness. "We react quickly to competitive situations and there "We've been waiting for some unve been minor inconsistencies, time to hear how DEC is going to sort this out. In the meantime he said. "But I'm surprised there

Valentine added, "We've gone At another authorised distribu-tor, MBS Rentals, the rentals sales through some rough water but we expected it because this is a dramamanager, Philip Ely, said DEC had made "several blunders".
"We've had six price changes and uc change in distribution. We're on the edge of it now. I think everyone will have a happy Christthere has been some strange disparity between what we pay and the prices DEC charges end

Meanwhile, companies which did not make DEC's official list are still campaigning for inclusion. Dave Surgeant, distribution manager at Midlectron, said DEC did John McLean, managing director of Zygal Dynamics, said he was not prepared to talk about the matnot even need five distributurs becsuse the company was but Midlectron was still fighting for recognition. "We were very disappointed at being left out, because we were the first DEC re-"It's true to say the programme is not working as well as we had hoped," he said. But DEC was confident the proseller in the UK, back in 1976," he gramme was on the right track. Edgar Valentine, head of the ter-

plans to add to the distributor list.

DEC faces damages claims of £10 million from Darkcrest, the UK systems bouse which it has taken to the High Court with softsuppliers did quite a lot of damage by selling terminals cheaply at the ware piracy allegations. And outcome of the lawsuit could have On the handling of small orders from users, Valentine said this was worldwide implications for the resale of systems with the equipment a grey area: "We made it clear to manufacturer's software. ''It appears DEC says we have no right make exceptions with certain cusdo this even when we have ought and paid for a liceace," he

Jobs begin to be lost at Storage Tech

by Borie Sedacea

STAFF cutbacks are starting at Storage Technology, a leading manufacturer of IBM plug-compa-tible peripherals.

Storage Techology's UK sub-sidiary has made six staff redundant and another six are to follow

ment reshuffle at Storage Tech nology about three months ago when Derek Thompson took over ns managing director of the UK operation from Colin Cook. Previously in charge uf European operations for Storage Technology, Thompson came into the company when it acquired plug-compatible printer manufacturer

"Prior to the merger in January 1981, both companies had about 50 employees each, and staff more than doubled over the last year to Documation. 220, but we have taken steps not to appraise their performance

where we have over-recruited. "We have decided to do it dur ing this third quarter of 1982, ather than leaving it to the end of the year. The total number made redundant will probab! end up as

2 people," he said. Things looked rosy for the Colorado-based company one year ago when its shares were being traded at around \$40 on Wall Street, but the fall from grace was Nick Brackenbury, said the outcome of the lawsuit could have new financial restructuring pack-age which includes a \$25 million

debenture repurchase. The company also dropped tw ambitious product develo Visual Storage System and a high

'Dozens of enquiries' to buy Modular technology



McNULTY . . . Founder of firm.

Rout is optimistic about selling

vendor, is one of the contenders.

Modular Technology went into the receiver's hands on July 29 after being called in by the company's financial backers.



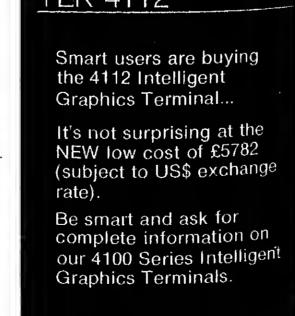


ENQUIRIBS are flooding in from computer companies eager to buy up the casb-strapped data commu-nications to anufacturer, Modular Technology.



ceiver's assistant at accountancy firm Chater and Myhill. 'We are in the middle of a number of nego-tiations and we are now waiting for formal offers."

going concern to another company within the computer industry. We are hoping to seil the business of the company but we will have to consider other alternatives if these enquiries all fall through," he said. Birmingbam-based Peripberal Hardware, an OEM and terminals yandar is one of the contender.



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Denied Swansea, ICL lands £15m US order

tender for the mainframe element of the DVLC contract, ICL today announced confirmation of a £15 million order in the US. The order, ICL's biggest

York social services department lts own machines.

by Kevin Cahill communications Authors, and some state of the shortlist in the nounced the shortlist in the shortlist in the nounced selective tender for three parts of the Swansea Centre contract so far

> According to the Treasury spokesman, the total value of the equipment requested for tender la £16 million.

The first part of the tender, for he mainframe and integrated in-York social services department and is worth up to three times more than the mainframe element of the DVLC contract on which ICL was unable to bid to replace the ageing ICL System 4, has been shortlisted to IBM and been shortlisted to IBM and been shortlisted to IBM and been shortlisted to IBM. Honeywell, both US manufactur-

The Treasury, acting on behalf of the Central Computer and TeleIBM has taken a very tough

The original order for Swanse was awarded to ICL on a single tender basis, but under BEC and General Agreement on Trade and Tariff rules, to which the UK government is now a sig tenders for government computers other than those connected with national security must go to public

In this case the planning mis- Turn to page 6

home to roost with a vengeance. order, putting out a statement earlier this year clearly indicating that it would challenge any attempt by it cannot provide a machine for test by the end of 1983, the government to give the

The requirement is for the tendering companies to provide their middle of next year and start delivering it for installation by the end of the year, with completion of the full installation by 1987. ICL wanted to offer the 5-6-

minal programme, said the long-

term contracts with unauthorised

distributors had expired in June

and the company would not take

end of their contracts," he said.

"Some of the non-authorised

he distributors that we would

tomers. In any case this applies in

MIP Estriel but cannot provide a machine until 1985.

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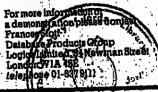
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Govt promises simpler telecoms approvals approval procedures. Contrary to the opinions voiced by many, British Telecom's mono-

untarily before the Act.

CONSIDERABLE criticism of the government's aew network attachment approval procedures has come from the data processing in-

come from the data processing industry, according to John Compton of the Department of Industry.

Compton, who has headed the Dol team overseeing the introduction of new approval procedures, said that equipment that would be done step by step over the condition of new approval procedures, said that equipment that would be done step by step over the condition of new approval procedures, said that equipment that would be done step by step over the condition of new approval processing industry.

The range of modems that could be approved was now unrestricted and it was also now possible for manufacturers to seek approval for cordies telephones.

It was argued that indirect attachments should be left to the Compton, who has headed the Dol team overseeing the introduction of new approval procedures, said that equipment that would be indirectly attached to public aetworks, for example via a modem, was often difficult to subject to independent appraisal because It was software driven and too complex to write simple standards for.

The government accepted the criticism, he said, and was devot-ing considerable effort to reducing the criteria for approval to the minimum and simplifying the procedures for getting lt.

THE International Conference on Computer Communications has been held biennially since 1972 and this year's, the first to be held in the UK, attracted 1,600 delegates from many countries.

It is the main international forms for discussions between the computer and the computer and professor Sandy Douglas of the London School of Economics and it was the only umbrella under which IBM and AT&T could talk to each other on scientific topics. Donald Kennett reports.

Speaking at the session on regulation and public policy at last week's ICCC82 conference in Loodon, he added that not much progress on attachment liberalisation was visible one year after the British Telecommunications Act took effect.

But detailed preparation had been made for future independent

However, standards were to be published this week and the whole thing would get under way. The supply of new spparatus would grow if not to a flood then to a substantial stream. They were aimed predominantly at telephony on the public network, because that was where the monopoly had been strongest.

The monopoly on other attachment independent industry poisoning workers or causing acid rain, so they were unlikely to be effective in this case. The government was still worried that chaos could be caused on the network by unrestricted autodialling. The Dol's task was to balance the public good against complex, laborious and expensive approval procedures, he said.

Plea for user network interface A PLEA for a universal network ferent naming conventions and dif-

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A PLHA for a universal network services interface for users was voiced in the ICCC82 aession on human factors by Dr Barbara Huckle of Hatfield Polytechnic.

Users needed to be very sophisticated th use today's public networks, she said. They had to be aware of the many different elements of the connection between them and the application of their choice, each one having different prompts, different commands, different commands, different commands, different commands, different commands in the interface was a simple set of facilities and their structure had to be coasistent with what the user was trying to do . "The underlying model is coating," she said.

The Unix user interface was a good example of that. Although it looked atrange, it was essy to use.

Ideally, someone like British

Telecom would provide the interface on a translation service. Then others could take it up for their networks and services. "Incommittee who simply wants to access a few databases and execute a few grograms that happen to be on different computers," she said.

The Unix user interface was a good example of that. Although it looked atrange, it was essy to use.

Ideally, someone like British

months the monopoly would be effectively eaded except for some amail details like provision of the Speaking in the same session Logica chairman Philip Hughes tried to redress the imbalance of arguments about liberalisation by

manufacturers to seek approval for cordiest elephones.

It was argued that indirect attachments should be left to the control of market forces. But marlisting some disadvantages which, he said, are usually only mentioned by BT and its unions and thus suspected of being mere

monopoly was an attack on public ownership. Underlying the res-tructuring of telecommunications vere the wider political questions about private enterprise and mar-ket forces. There was a drift to the political right almost everywhere except France that was dictating what was happening.



MOS chips '100 times Strategy helps users faster by late 1980s'

BELL LABS' president Dr Ian
Ross said at the sixth International
Conference on Computer Communication, that the progress of the Conference on Computer Commu-nication that the progress of the last decade, during which the number of components that could be put on a single chip had doubled every year, would con-

From this year's 600,000 components giving 256 Kbit storage locations, we would go on to see 4 Mbit capacities in the late 1980s. By that time, MOS chips would be 100 times faster than today's and gallium arsenide chips far faster. Since 40% of chip maoufacturers' costs lay in the silicon part, this kind of progress was worthwhile, he said. But it was not enough on its own.

enough on its own.

Reliability and usability were essential so that systems became universally acceptable and were

"We need systems that people can use with ease and confidence." he added. "Only then will we be on the pathway to the information

By 1990 chip components would be as compact as their equivalents in the human brain and by the end of the century a briefcase-sized computer would have capabilities equal to those of the brain, such as storing 20 million facts and dissi storing 20 million facts and dissi-pate 20 milliwatts. However, the brain operated through the in-terconnection of alow, small, but specialised processors.

The computer industry had already learned to trade simplicity for speed. Maybe the way forward

systems need a strategy to help them see their way through o mass of unbelpful information in the marketplace, according to Clive Tristram of BL Systems.

Tristram told ICC622 delegates that this strategy should focus on organisational needs rather than the features of available systems.

Users did not want to know about

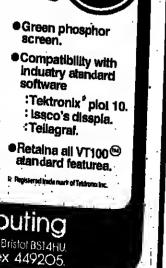
The emphasis should be applicatively and job effectiveses the implementor should confidence to make the systems worth using the manage of the propose were unused to make the systems worth using the features of available systems. Rather than forcing additionally application to the implementor should confidence to make the systems worth using the implementor should confidence to make the systems worth using the implementor should confidence to make the systems worth using the implementor should confidence to make the systems worth using the implementor should confidence to make the systems worth using the implementor should confidence to make the systems worth using the implementor should confidence to make the systems worth using the implementor should confidence to make the systems worth using the implementor should confidence to make the systems worth using the implementation of personal p

low an evolutionary path, building on previous successes," he said. ldentify areas of work that were able for them. crucial to the success of the cominvestment could produce large them even if it was not it them

system. Rather than forcing so

Another speaker in the of

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Laver warns against self-justification. It was important to realise the political point that an attack on the industry parochialism

COMPUTER and communica-tions professionals must avoid be-ing parochial in their consideration tions professionals must avoid being parochial in their consideration of the social consequences of progress in their field. So said Exeter University pro-chancellor and retired Post Office director Murray Laver in a lively and amusing introductory paper.

Laver warned against thinking Laver warned against thinking

that we were experiencing the unique point at which computing, communications and microelec-tronics were combining synergistically.

"It is far more likely that the

future bolds much more change and much faster change than any we have yet experienced," he said. Thinking otherwise would lead us to take hasty action to deal with what we regarded as a once-for-all

We must not let the tail of the past wag the dog of the future, he added. He illustrated the point graphically with a drawing showing the line of exponential growth going up the back of a seated dog, coming from its tail which lay almost flat along the ground. The present time was at the base of the

The intellectual parchide ever-narrowing specialist caused hardware and solven

signers to think they could be consideration of the societies nomic consequences of the ratto social scientists. They design trespass outside their sequences because it was alarmingly and We should recognist

neither precision nor onishould be expected of our men at policy-making. But we formulate some principle d'à sign that ensured the min would be adspted to people it than the other way around.

We should avoid being sa into thinking that quantilely formation and programm operations were lottinia auperior to the qualitative into tion and aon-programm methods we used all the time We ahould ideoutly the di:

hardware. It is giving it away oo There is a catch of course there is no such thing as a free computer - you have to buy the

weed out useless info

IMPLEMENTORS of office The emphasis should be at

Users did not want to know about the systems, he said, they wanted to get on with their jobs. In his company's case that was making cars economically.

"Our strategy would be to fol-w an evolutionary path, building a previous successes," he said.
We wouldn't carry on the carry of the c "We wouldn't carry on up a path them accepted. Micros Rau them accepted.

year service charge for a twin 500K floppy drive computer, com-plete with CP/M operating system and a suite of business application software, the catch does not seem

start, says managing director David Lewis-Pryce, and is now ready to launch its range. Lewis-Pryce aims to redress the balance in the UK market, where US and Japanese machines have swamped home-grown microcomputers. He intends to do this with the

six Andromeda variants — Alfa, Vita, Gama, Thelta, Epsilon and Zits - which span s range of floppy and bard disc capacities and video monitor sizes. The range first year, update charalso includes a portable version per package per year.

tors, partly in an attempt to guard against the supply problems that have plagued many UK micro Basic versions of each Andro-

using British components wher-

ever possible, says Lewis-Pryce.

software and pay a maintenance charge. But when the price comes out at as little as £1,995 plus £500 a makers lately. meda model, and all five of the bottom-of-the-range Alfa, can be bought outright by end users. They come with varying numbers of spplications packages, building up from a minimum of Lexicom-l word processing and Trendiac data ITCS set out last December to management software to a suite including financial modelling act-

KITCHING . . . "The small end of IBM knows that Memorex has arrived as an alternative.

pay for the software

to distribute its UK-built

by Robert Parry
NEWCOMBR to the British
which Lewis-Pryce claimed last month would topple Osborne from

microcomputer sceoe Information and Technology Computer Services (ITCS), has hit on a new way

Hardware is all built in Britain,

ware and integrated accounting packages from Sapphire Systems. Maintenance contracts available for all systems, and required for the more upmarket models that are provided on the basis of buy the ftware and borrow the hardware, include a four-hour response time and 24 bour replacement in the

The first year's software up-grades are also included. After the first year, update charges are £25

IBM buys HMOS-III technology from Intel by Howard Karten

INTEL last week disclosed that IBM bad purchased progress technology including production tapes used in producing HMOS-III technology for producing 64K dynamic RAM chips. It is uncertain whether IBM will actually use the technology, and IBM, as it usually does, is keeping a low profile redoes, is keeping a low profile regarding release of any specific in-formation about the deal.

One goal of IBM's action is apparently to quickly procure greater speed for future mediumand low-end systems it intends to produce some time in the future. IBM did not provide any specifics. IBM usually produces virtually all ...

of its chip requirements in-house. IBM last week introduced a new high-end for its 308X line. The 3084 introduced last week is a

four-processor system consisting of a pair of IBM 3081 systems coupled together. The 3084 is currently available only as an upgrade from a 3081. IBM rates the 3084 at

IBM also cut purchase prices on several models in the 3081 family, while raising rental and lease prices (but not in the UK).

The 3084 can operate either as a ughtly-coupled, four-system MP



slated over terror file

by Jack Gee FRANCE'S national Commission for Data Processing and Liberty, the CNIL, has taken President the creation of a databank file o terrorists without seeking its

permission as demanded by law.

The 1978 Act of Parliament which established the CNIL and endowed it with the wide-ranging watchdog powers over databanks requires that the State must consult it before creating computer files. Only the Council of State, France's highest reviewing body for administrative decisions, is em-

terrorism.

Reacting to Mitterrand's announcement after several weeks'
silence, the CNIL's president, silence, the CNL's president, Senator Jacques Thyraud, a Conservative opposition politician appointed by the last government, said: "I am sbocked by the idea that France would benefit from having a databank similar to that of West Germany's eriminal rolling the RKA

Memorex hunts IBM 4300 base

clear Memorex's atrategy for the

the 3690 in the UK went to Mar-

thon International in London this

Memorex has long emphasised

Memorex, which last week made a be the more significant. series of thin film head disc storage

As well as a thin film head mass storage drive to compete with IBM's long delayed 3380, Memorex is offering a new option to 1BM's amall-end users. "The small ead of IBM knows that Memorex has arrived as an alternative," said Mike Kitching, manag-ing director of Memorex UK, who termed the product announcementa as the most significant in his aix years' tenure as head of the UK

compatible manufacturer to de-liver production level units based on internally developed thin film

its intention to supply a plug com-patible equivalent to 1BM's 3380 While Memorex's new 1.26 gi-gabyte 3680 drive — which will be delivered early next year just 12 mass storage drive. That the company has already installed the 3690 disc system, which Kitchiog says uses the same thin film technology storage aystem - looks the more which has given IBM so many problems, gives credence to

LAST to announce, first to de-liver. That is the claim of small and medium 4300 user could the 3680 will begin as acheduled small and medium 4300 user could the 3680 will begin as acheduled

Kitching says there are twice the number of 4300 installations as all first quarter, UK deliveries in the second, with an OEM product, the other mainframes put together.
The two new products for the 4300
- the 571.3 Mbyte 3690 disc subsystem and the 3260 tape drive The 3680 does not use thin film - are the first in a line of an-nouncements which will make

media - it uses edvaoce particulate media, and the next step once it is on the market is likely in be double density version. Price of the 3680 will be slightly

Eighties.
Kitching eatimates that Memorex will be able to offer the below IBM'a 3380. Kitching says 4300 user an alternative for 55% of he is taking ordera now, and while hardware costs. First delivery of he haan't released a UK price list, he will guarantee delivery prices a ao higher than IBM's. month, and a number of units have been installed in Japan. The first 3260 is going into CPC in Esher.

Kitching adda that he has "absolutely no doubt" that there will still be a shortage of 3380s in 12

With 1.26 gigabyte storage capa city per module, the 3680 subsystem offers up to 10.08 gigabytes per eight spindle string. conds, and the data transfer rate is three Mbyles per second.

Decentralised job scheduling to help users of large IBM networks

decentralised job scheduling. Cambridge Systems Group's schedules for remote sites to be set up and tied together into a master schedule for the central mainframe the first time that such a produci ia available, claims CSG preai-

dent Shawn McLaren. He sees the feature, with master and subsidiary schedules all working properly together, as par-ticularly important for users like oil companies, which McLaren claims are sticking with manual systems rather than moving to an

systems rather than income to an automated system that cannot handle decentralised scheduling.

ADC2 joins two other products from the California-based supplier of mainframe system software:

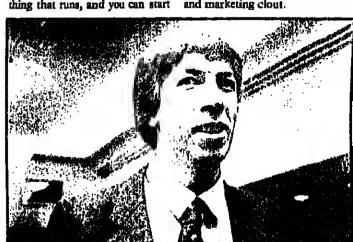
ACF2 data security and ASM2 dats management software. It runs under IBM's MVS operating ystem, and will slot in with the ther products to give

by Robert Parry

USERS of large 1BM networks are to be offered an automated acheduling system that can cope with duling system that can cope with which initial scheduling can be set.

But the main feature CSG is such duling right away. You can get system a going in weeks in months to years," he claims.

"You need to define a whole lot "Setting up a null schedule allows you to get the job history on everything that runs, and you can start "South 25 Systems have been in the US, and McLaren recknns the CSG name will give the product respectability and marketing clout."



McLAREN . . . The CSG names gives respectability and marketing clout.

International shakeup in banking

customers can now do money transactions from their homes using personal computers linked to the bank's mainframe. NatWest and Midland say their

plan will create the biggest auto-teller machine network in Europe.

service banking in the UK, US and Bill Penney of BIFU's Midland

for administrative decisions, is empowered to reverse a negative decision by the CNIL.

In a massive media campaign to appease public opinion after the shock of the massacre in which six people died in a Jewish restaurant in Paris in August, Mitterrand went no TV to announce that a databank has been set up three months earlier in order to combat terrorism.

service banking in the UK, US and Italy.

Twn leading UK banka, National Westminster and Midland branch. "But as customers get used to auto-tellers there could be a dramatic effect on jobs."

Both banks have NCR auto-tellers. The banks will have their own machines online to their own machines online to their own computers, as at present, but offline to each other's. This means to all customers.

And in the US Chemical Bank, customers will be able to use extra services such as certifier account. services such as getting account balances, while the other bank's customers will only be able to draw cash. There will be no charge for

> the service. Transactions from the other bank's customers will be passed

ponse to Bsrclays' Saturday morning opening because of our policy on Saturday working," said tellers. They are also considering links between their computers for electronic cheque clearing.

Italians depend on cash because cheque and credit cards are treated lot of lire because they cannot be assured of finding a branch of their bank in every town: even the big-gest banks have under 500

In the US, bank branches could ecome a thing of the past with the srrival of armchair banking. Chemical Bank customers wil soon be able to use Atari personal computers to check their bank balances, transfer funds between accounts and pay bills to shops, pub-

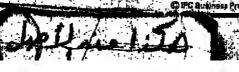
unit or as two dyadic systems. In the former configuration, it will be supported by a new operating system, MVS/XA (extended architecture) due for release 1983.

Wall Street analysts seemed generally unexcited by IBM's announcement, which was made on the Friday preceding a three day weekend. Several noted that the 3084 uses no new technology.

In the former configuration, it will be supported by the last government, the former configuration, it will be supported by a new operating said: "I am sbocked by the idea of 1983 NatWest will said: "I am sbocked by the idea of 1983 NatWest will be passed in the New Ynrk area of that it is supported by a new operating adatabank similar to that of West Germany's eriminal police, the BKA.

"If that 'happened there would no looger be any point in having a no looger be any point in having a National Commission for Data weekend. Several noted that the sevents, the 1978 law setting up the cond of 1983 NatWest will be passed in the New Ynrk area of Companies in the New Ynrk area of Ynd and Tally the leading of the New Ynrk area of Tally the Leading of Companies in the New Ynrk area of Ynd and Tally the leading of Companies in the New Ynrk area of Ynd and Ynd area of Ynd and Ynd area of Ynd area o And Shawmut Bank in Massa-chusetts is looking for home com-puter users to follow suit with a pilot home-banking plant. Other US banks are believed to be expe-

firmenting along these lines.
Chemical Bank's service will be offered to between 2,000 and 3,000.



'IBM turnover \$100bn by 1990'

By the year 2000, IBM will have a world-wide turnover of \$300 bil-lioo and will have become a conaumer products manufacturer, according to a report* by market

four "strategic periods", starting with the distributed processing strategy from 1981 to 1986, based on the 308X mainframe series Ex-

based on Systems Network Architecture and characterised by verticul marketing programmes, voice products and low-cost optical char-

IBM will quadruple in size to become a \$100 billion organisation by 1990, according to one optimisits entry into the consumer products market. The Strategic report describes the IBM Personal Computer as "s big market research

turnover from \$100 billion to \$300 research analysts Strategic Inc.

These events will take place over four "strategic periods", starting with the distributed processing with the distributed pr

encouraged them as long as they flew in formation," it says.

In a time of the BM needs wild ducks and one of the ways to recapture and recycle some of

"IBM waots to triple its

Age. But IBM has to iron out certain 4300s.

This will then be followed by the office automation strategy from 1986 to 1990, which will be based on Systems Network Apply.

acter recognition devices.

The period from 1991 to 1995

them would be to organise an IBM venture capital fund. This would

enter new markets at an early stage, develop new technologies and provide different types of rewards and working environ-

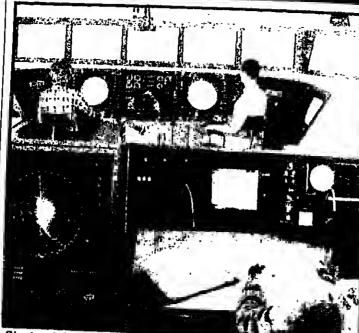
ciated with the company. Another problem perceived by Strategic is IBM thermal cooduction module technology used on the 308X series, which it describes as a "technology trap".

meots from those normally asso-

as a "technology trap".

"This is a very example approach, requiring special tooling for manufacturing and maintenance. Although the packaging is elegant, it is expensive, and TCM pushes the state of the packaging art beyood its economic limits. Simply stated, there are chesper. Simply stated, there are cheaper ways to solve the problem."

Nobody at Strategic was in position to substantiate this assertion when we went to press.



Trainees sail a PDP-11

by John Kavanagh
SUSAN is doing her bit for sailors
in Hamburg. For Susan is a £3
million ship handling and navigation simulator giving practical
training to Hamburg Polytechnic
students aiming at a master's certificate. And it is claimed by its

manufacturer, the Krupp engineering group, to be the world't most sophisticated system of its

most sophisticated system of its kind.

Susan is built around a Digital Equipment PDP-11/60 minicomputer linked to six Krupp process control computers, one of which controls 11 projectors presenting what is harmonized in the "sea what is happening in the "sea lanes" outside the "bridge".

For extra realism a hydraulic system under the bridge produces suitable pitch and roll motions. The system holds descriptions of different types of vessel and navigation and manocuvring situa-tions, which can be called in

hrough a keyboard Fur example, the trainee captuin nd navigator can take a container ship from Geroson Bight to Homburg, nuturing and easting off with or without help from tugs.
Poor visibility, currents, wind, other traffic and other conditions

can be geoerated to test atudents. Krupp says the rapid growth of sea traffic and the increasing size and speed of vessels have led to shortages of seamen with ship handling experience. Krupp says nigh seas to get experience.

Rush is on for the new VAX

months.

CHA managing director
Richard Coulson said his company recording systems, has three VAX-11/730 ustomers lined up. And CHA exects to take a second in house year. Coulson said the system was computer network from the two computer network from

already had three VAX-11/730 customers lined up. And CHA expects to take a second in-house system before the end of the year.

Coulson said the system was priced very attractively and had extremely low running costs. "A great part of our future will be tied up with the VAX," he said.

CHA is using the system for applications software development and for work on broadband networks. The company is one of DBC's 10 authorised computer distributors.

of the power of the original big VAX-11/780 at 20% of the price.

The low-end VAX is part of DEC's two-pronged attack on computer markets. At the other end of its computer products again. DEC's two-pronged attack on computer markets. At the other end of its computer products scale it is moving increasingly powerful versions of the PDP-11 architecture onto single microprocessor chips, and eventually will continue this process up to the VAX range.

When it does so the VAX range.

When it does so the VAX range.

Systems were chosen were thosen with the control region of the control region of the control region.

SALES BRIE £330,000 contract for Hoskyn

WATER treatment specific Houseman, maker of Prince Water softeners, has plend order worth over £330,000 r software bouse Hoskyas for order processing and large control system based on a Din Equipment VAX-11730 rater Hoskyos' MAS-M modulu will cation system, for which we 2,000 elements have so far to implemented. implemented.

Blood records

mary has ordered a CTL to from Computer Technolog a keep records on the \$8,00 kg samples its haematology dec-meot handles each year. Dair, be input from a Couler \$ h measurement and sody machine via a CT Lab more

Foundry system

BUTLER Foundries Group has placed a £60,000 order with Mill for a Busic Four 210 running its Cast production control ad g counting system developed to foundries by Dewtee Congr. Systems of Birmingham. Mill Profit manufacturing systems included in the order.

Mail order

NATIONWIDE Building Societies installing three Bell & Hori Aim System 7 computer a rate of up to 6,000 an hou,x lope from up to six hoppers bateli the output by postal are

Reed speed-up

REED paper group subsidered Spicer-Cowsn is investing of £300,000 in an order pressed and stock control system based. a Data General MV6000. Its system will be accessed for VDUs to its Southern report distribution centre and four in sales offices, enabling order in despatched within 24 hours of me

Steel design

by Joho Kavanagh
DELIVERIES have started on
Digital Equipment's new bottomend 32-bit minicomputer, the
VAX-11/730, launched in April.
The first machine in the UK has
been delivered to systems bouse
Coulson Heron Associates and
DEC says well over 100 will be
installed in the UK in the oext six
months.

BRITISH STEEL has ones
four graphics workstation for
the UK subsidiary of Interior
together with lotergraph's 100
design and drafting software
DMRS database management
aystem, for use with its own by
tal Equipment PDP-11/70.

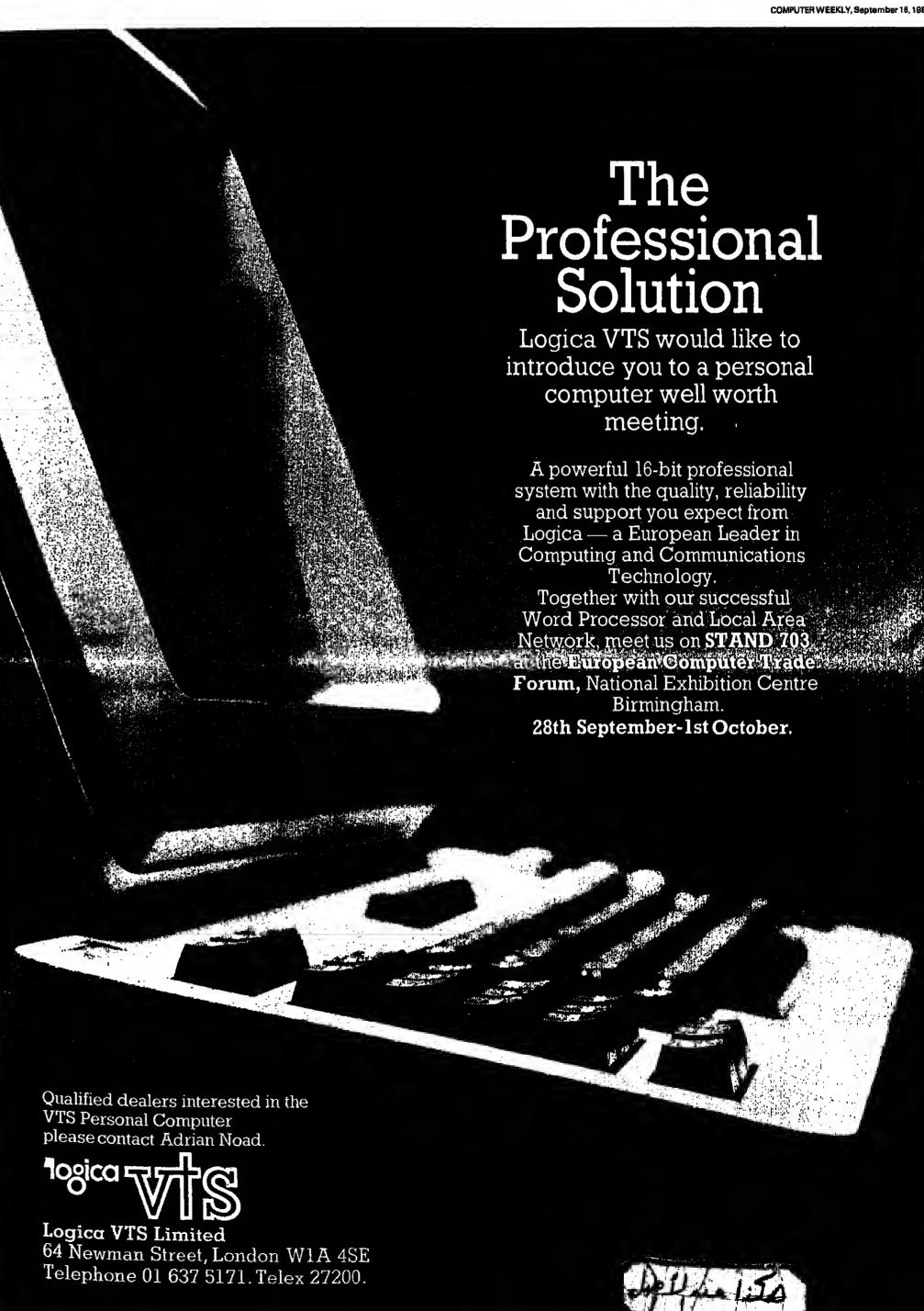
Key readers

attached to it.

Riding high

UK SUBSIDIARY of Moore Data Sciences has won an order of terminals and nine printed production control in TI Rules bicycle factory. They will be with the company IBM minis and 3031 mainfraine.

Conscript check CII-HONEYWELL BULL



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Over 2,600 visitors meant success for Compec Scotland 82, held in Glasgow last week. Margaret Cameron reports New boss Canny buyers are not taken in by fancy talk

visit of the exhibition in just eight months' time, in May 1983 at the Kelvin Hall.

would never have ventured so far months' time, in May 1983 at the Kelvin Hall.

This is the first Compec Scotland and one of s growing number of regional Compecs in the UK, the first of which statted last year in Manchester, Compec North. All are sponsored by Computer Weekly Well large Scotus are 'just looking', it seems, because the economic situation has hit them harder. Their biggest single excuse for not lack of interest," be said. With large Scotus customers at

Wales, will be held next March at Cardiff University. Compec exhi-bitions have been running for some years now, in London and

The Scots gave evidence of a subtly different market from that of the smoother DP professionals in the South. "Money is tighter in Scotland" was the observation of

With large Scotusb customers at The second Compec North was held in June this year and a new exhibition, the first Compec likes to be identified with the Scottish market and to this end, stacked up its stand with cans of

Tartan Ale. Rediffusion Computers, which has up to now relied on its 50-foot mobile marketing truck for its "missionary" work in Scotland, was one of those exhibiting at the first Scottish Compec. At ICL's extensive triple-

fronted stand, sales executives admitted Scots were far cannier than

standard features. And if you

COMPEC Scotland 82 was held last week at Glasgow's City Hall.

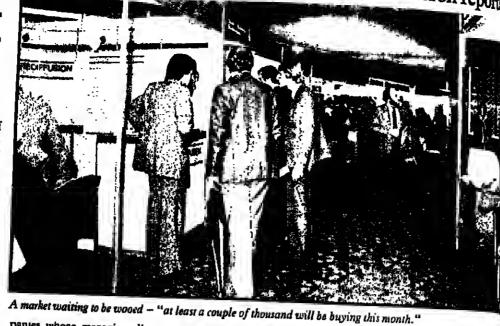
And the Scots are to have a return would never have ventured so far would never have ventured so far have to work that bit harder to have the scotland as the s persuade the Scots buyer. He is not impressed with fancy talk or waiting to be wooed.
"The Scots are 'just looking', it argon. He wants to be dealt with

compelled to take the opportunity of exhibiting at Compec Scotland because the annual Compec exhibition in London has such a good

One less entbusiastic exhibitor, sales executive Peter Andrews at the Northern Engineering Industries stand, found the national empec exhibition hard to emulate. "Compec Scotland cannot be as successful as Compec because there are not enough DP profes-

"You must divide all UK stans-

General Electric also offers



panies whose managing directors had to make decisions this month alone on the purchase of at least £10,000 worth of computer equip-

Tony Stewart, managing director of Keyboard Productivity, s Glasgow training company, said: tics by a factor of 10 to apply them to Scotland," he said. But he added that there could be at least a scotland is really a country characterised more by small business. couple of thousand Scottish com"Often there will be no DP pro-

"If only other computer fessional or specialist in the company, so they have to look outside for training and consultancy advice. The exhibition has created great interest among the DP profeionals there are in Scotland and it is nice to see that the big computer firms realise Britain doesn't stop at

Watford Junction.

panies would now and then it wee bit of time to get to have particular needs of Scolad to their sales trips up here will very successful. Scott dom't to be treated as if healer to growing from their can be len bamboozled with too may also

to shake up MDS by John Kavanagh AN ICL man has taken over with a bang at MDS Computer Systems (UK), part of the US distributed systems supplier Mohawk Data Planning executive reporting directly to Robb Wilmot, the managing director. At 22 he was put in following the birth of ICL and a

bang at MDS Computer Systems (UK), part of the US distributed systems supplier Mohawk Data ciences. After a month as managing director 36-year-old Gerry deredith-Smith is planning new ptoduct pricing structures, a dealer network for small systems and the introduction of an identity card production system.

Sales up 53%

at Floating

Point

He has also created a public relations manager's job to spread the word about MDS, and has res-tored the Mohawk name to the

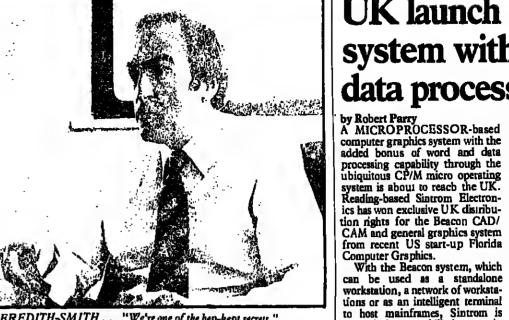
company's letterheads.

In 15 years at ICL MeredithSmith moved from humble programmer to corporate strategy

year later became the company's youngest account manager and then the youngest regional sales He was headhunted by MDS 10

take over from Ray Skinner, who resigned to go into the recruitment

Meredith-Smith aims to quadru-ple MDS' turoover from the cur-rent £5.2 million over the next two years, partly by concentrating on virtually an industry standard big sales. He is thus looking at system and there is a wealth of selling small systems through



MEREDITH-SMITH . . . "We're one of the best-kept secrets."

tackle the company's traditional field: selling distributed systems to

MDS' US parent is opening the way to such a move by considering putting Digital Research's CP/M operating system on its smallest system, the Series 21/10. CP/M is lications software available to

looking at new pricing for MDS' Trivex range of IBM-compatible display terminals. At present the

company offers no discounts. systems, where graphics displays New products in the pipeline include an electronic mail service are becoming essential in presenta-tion of information. This system is made by a US firm, DEK, which was taken over by MDS.

UK launch of graphics system with word and data processing bonus

formation systems will be the largest merket, worth about \$840 by Robert Parry
A MICROPROCESSOR-based computer graphics system with the added bonus of word and data

amalgam of predictions from prove optimistic, Moseley will no be too worried. "Half that predicted growth rate still gives you a healthy market 10 be in, " he

The Beacon systems use numer ous microprocessors, a 16-bit graphics processor built up from AMD bit slices and a Z80A administrator to carry out general pur-pose tasks aided by dedicated processors for keyboard and moni-tor functions. The operating workstation, a network of workstato host mainframes, Sintrom is first aiming at skilled users in R&D departments - the tradi-tinnal CAD/CAM graphics applisystem used is called FCGOS, which is CP/M-compatible.

Users can choose 16 graphics and 16 slphanumeric colours from a palette of 256 shades for the 640 and windowing of parts of images, which can be stored with fou times the screen resolution in the grow at 85% a year over the next maximum expanded graphics four years, and that business in-



humediate, reliable hard copy data communications with a

network applications. quiet and casy to use, the energy efficient GE 2120 comes with an outstanding list of



A STATE OF THE PARTY OF THE PAR

on-line time and communication charges as much as 70%. sustained 150 cps rate. Whether Transmission speeds are avail-

need more, we have more than the GE 2030 printer. Identical enough options to choose from. to the GE 2120 in standard GE IS YOUR BEST CHOICE the GE 2030 prints at sustained features and available options. FOR QUALITY OPTIONS. speeds up to 60 cps. Of course, here is one other difference... A 32K Text Editor allows it also costs less. So if you dun't you to work off-line to reduce need the speed, selecting the GE 2030 may be your best chaice.

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the quality and printer technology.

industry leader in electronic printing. We pioneered the industry in the first place.



OCR Scandata and Scan optics

From page 1

ICL loses and gains Given the Prime Minister's inthis equipment, which will ke quired to read between 500,00 terest in seeing ICL involved in the DVLC contract, it is surprising that the specification was written so that ICL could not tender for and one million documents is week. Both sgain are Amena companies and were among to few companies which could str ally tender for optical charge page reading equipment which

so that ICL could not tender for the key central processors. This political hot potato is one of several likely to drop in politicians' laps as a result of the Swansea tender. The second element of the tender request is for OCR equipment, which is a convenient way of overlooking the fact that the new media chosen for the key input task are very much more highly mechanised and less is bour inten-

Lark of money, not lack of interest, affects the decision to buy.

sive than the existing massive key-

read hand generated input.

The third element of the mis so far made public le for the pur

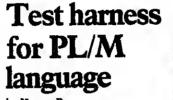
sumably offer the Siemens a this element of the tender, will be worth several sides pounds and which is likely his awarded jointly to both firms.

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by Kevin Cahill
SPECIALIST atray processor
supplier Floation Point Systems
has produced third quarter results showing sales and profits substanprograms to be tested quickly and

ually upon last year. Sales for third quarter 1982 were \$22.5 million, compared with 14.5 million for the corresponding quarter lsst year, a 53% in-

The sales growth was substantially exceeded by profits which at \$3.06 million were 101% up on the corresponding quarter of 1981 (\$1.5 million). The nine-month urnover was \$63.1 million compared with \$41.1 million for the first nine months of 1981.

The figures meet almost exactly the estimates for profit and sales made s few months ago by indus-try analyst Susan Hirsch of New ork brokers Smith Barney Harris

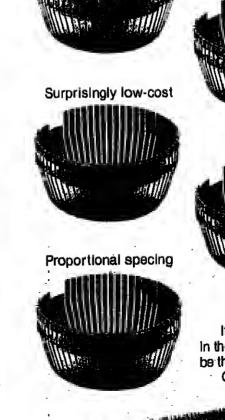
by Kevan Pearson COMPUTER and software conharness for Intel's PL/M language The harness allows PL/A

simply, the company claims.

The device is available in four versions, one for PL/M 80, and three for PL/M 86 including on with a built-in 8086 microproces sor for development work, and another for use in iRMX-86, In

tel's own operating system for i The system sutomaticall checks the result of running program and produces a test lo recording the input data, and re sults, with explanatory comments. Licence fees for the 8080 version

are £1,000 a system. Versions for the 8086 cost £2,000 for one system, £3,500 for two licences

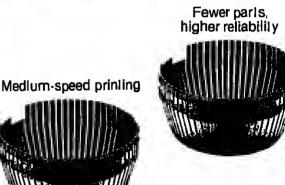


durable thimble

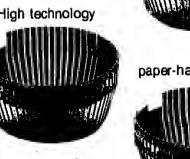


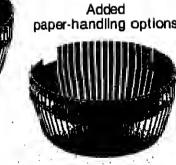
cations. But the growth market is

seen as business information









NEC's Spinwriter 3500 Series

If you're thinking about choosing a "daisy wheel" printer, think again. In the long run, NEC's new medium-speed Spinwriter 3500 Series may well be the more cost-efficient choice.

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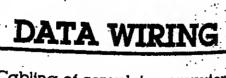
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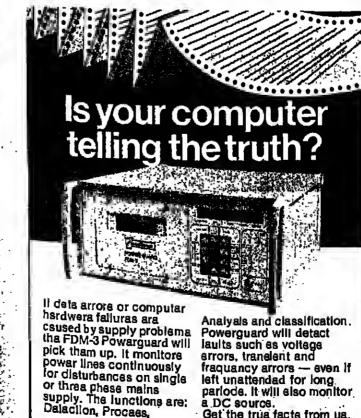
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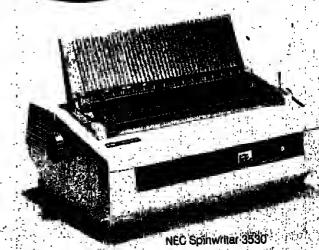
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64Kbit/sec BT service in New Year

by John Kavanagh

BRITISH Telecom's 64K hits-ssecond communications service will he svailable between six UK cities from January and the order book will be opened next month.

The new service is KiloStream, one of BT'a X-Stream digital communications scrvices launched at the start of the year. It is a private circuit service allowing users to send data on a single telephone speech channel without modems. It handles only one speech channel but provides very fast transmission. but provides very fast transmission for data, text and facsimile.



GILBERT . . . "This technology will become the norm in broadcasting."

Kode moves to Europe

but provides very fast transmission for data, text and facsimile.

Initially the service will he available between London, Birmingham, Leeds, Mnnchester, Newcastle and Sheffield. Most other major towos and cities will he knocked up by mid-1983 as part of BT'a £2,000-million-s-year modernisstion plan.

John Whyte, managing director in major systems at BT, said over 120,000 miles of digital systems were now working.

KODE Services is taking its Winchester disc repair service into Europe hy setting up maintenance facilities in Germany in the next nine months. At the same time the UK firm has won a contract from a fourth US manufacturer, Computer Memories, to handle repairs for its European customers.

The move into Europe comes director Ernie Griffiths. "Setting up repair facilities there will give us credibility on which to build a field service operation."

Here is the TV News – by WP hy Rohert Parry

AFTER the office of the future, the television studio of the future. The BBC, backed hy £250,000

The BBC, backed hy £250,000 the system, all the way down in securate running times for items because the property of the securate running times for items

hased on presenters' reading speeds. Late changes and retunings will be easy to incorporate. is to hring in a computerised word processing system to handle news preparation for hreakfast televieven once the programme trans-

The system, based around twin
Hewlett-Packard HP3000s, will he
much become the norm in broadcasting studios," says Philip Gilhert, general manager of the Lime Grove Studios. He emphasises the speed and versatility the system will hring to generation of pro-

sffairs programme, No. and Nationwide, he sp. The two HP3000 m

through distributed reap software and each ha is a storage. About 30 screen ported, spread around the tion offices and stude in the two machines is desi give resilience to the sylan! part goes down, s user () shie to move on to the sent

installed in the BBC's Lime Grove Studios. The Dol grant, under the scheme announced in June to set up pilot office of the future projects in public sector organisations, goes to HP for the hardware. The BBC will pay installation and maintenance costs. maintenance costa. As well as the normal word processing facilities to help journalists prepare stories, the system will he linked directly to Reuter's and other news agencies. Indi-First govt demo cent features 'real' CAD vidual producers or programme re-searchers will be able to use the

hy John Kavanagh

and other news agencies. Indi-

system as a diary and to store in-

justments, the exclusive War * belt is stronger as

INDUSTRIAL computer-aided design is on show doing real live work at the government's first emonstration centre.

The centre has been set up at solartron Electronic Group in Farnhorough under the £9 million programme aimed at promoting awareness of the use of computers in the electronica industry. It was opened last week by industry un-der-secretsry John Butcher. me because it shows positive willing to learn," he said. Visitors can see Solartron stall

ising a Computervision CAD system to generate production drawittes from printed circuit

board designs.
"It is irooic that the industry which has led the microelectronics revolution should need to he made sware of the use of computers," said Butcher. "Yet studies show that the UK is slow to adopt computer-aided design, manufacture and testing compared with overseas competitors and that there is a lack of awareness in many small "If this airuation is allowed to gincering in Tewkebur.

drift, the UK's competitiveness

Butcher added that there had

been an encouraging reput the government's file. equipment funding schen; induced in July. Support in £600,000 had been approach

projects out of 40 applicates Howard Dorey, chie iss engineer at Solartree, sil:

company was getting rates three days a week. The

there would he s lot of rier there have been - and there.

Dorey said Solaring hill good results from CAD: To

covered the cost of our frage in nine months. That's sopp

for investment of that kind.

Solartron is working to more automation. It has to

Equipment 32-bit VAX # puter for circuit design l matic circuit board drilly

The other demonstrate

centres are at Racal Come tions in Brscknell, Face: Edinburgh and Micro Circle

sre arranged through its is-

multi-user operating system.

Systems house SISCO has implemented the Control database developed by Phase One in California on the Oasis system to run on the Executive machine made hy the Computer Information Company in the UK, for which it is an OEM. Executive can be either an 8- or I6-bit micro, so the 16-hit implementstion will be compatible with the IBM Personal Computer and ACT Sirius I, both of which support Oasis.

"We decided not to be the cavalry and be first over the hridge, but to wait and see what happens."

SISCO has integrated word proceasing into Control, and given the Access module report writer, to make it auitable for end users.

"Effectively, we have stopped selling word proceasing and database as separate functions and put the two raw products together," said O'Brien. "It was a case of getting away from bits and hytes, and giving the user a straightfor-

SOFTWARE FILE

and AC1 Sirius I, both of which support Oasis.

"We have held back from launching the 16-hit version because people have not yet realised the benefits of the second generation of micros," said Patrick



ward means of producing persona-lised letters for about £8,600, in-cluding the cost of a top quality

"We decided not to be the cavalry

system into the same competition bracket as the Waog and Wordplex word processing systems, hut with the advantage of an integral database. Oasis is an integral datahase. Oasis is a more attractive operating system to end users than, for example, the Unix portable system, because of its user-friendliness. It also has good record-locking facilities and, if packaged up with a Winchester disc oo the Executive, can support up to five users oo an 8-hit machine, according to O'Brien.

"On an 8-hit machine with that number of users, the end user cost

"On an 8-hit machine with that number of users, the end user cost is shout £5,000," he said.

The combined database and word processing system has already been io stalled at the Periodical Publishers Association and Charrington Fuel Oils, and at three major banks.

Software File is compiled by Maggie McLening.

Relational DBMS for

16-bit micros on Oasis

RELATIONAL database will O'Brien, sales director of SISCO.

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Graphics firms rush into colour

WITH the foot of financial modelling now firmly planted in-side the husiness door, it may soon be wearing a range of colourful manufacturers Digital Equipment Corporation, Intel, and Tektronix. Major names among the 12 include Digital Research, ICL, Microsoft, Xerox, ISSCO and Westinghouse

shoes.
Following database specialist
Cullinane's recent link-up with Computer Pictures to provide Its IDMS Online Query Language with colour graphics facilities, major US software package velopmeot, and financial modelling is an obvious area in which colour graphics can be used to improve clarity and impact of supplier Maoagement Science America (MSA) and its subsidiary Peachtree Software International have both announced products in

ata.
"I see s hig trend towards graphics for reporting, both on mainframes and micros," said Michael Hunt, vice-president of MSA. "Although our prime busi-ness is selling financial application This is likely to be the start of a spate of colour graphics releases hy other software suppliers, as the graphics industry moves quickly towards establishing its own stansoftware, there will he a lot of graphics bundled in with it, hedards. Twelve graphics software companies recently pledged support for the two atandards, North American Presentation cause there is such a demand. The graphics will not be used to sell the Level Protocol Syntax (NAPLPS) and Virtual Device Interface

financial packages; they will he the leing on the cake."

MSA has Isunched an interface module to operate in conjunction

Standards for graphics protocols and function interfaces will give a stable hasis for future de-

modelling software, which can be linked to access any MSA system modules, such as general ledger, accounts payable, payroll and per-

sonnel.
"This is essentially an interface to the IBM displsy system, and as such is supplied free with the forecasting and modelling software," said Hunt. "If the user wishes to download data to a micro, he could use the Peachtree resolute resolutes in trade."

grsphics package instead."
Peachtree has launched two
colour graphics products: Peachtree Business Graphics System and
Peachtree Graphics Language

The Business Graphics System includes an interface to Peachtree's Peachcalc, formerly known ss Magicalc, and Peachtext, formerly Magic Wand. It is a menu-driven magic applies applies an expension program for graphics application program for CP/M based micros, which can be used to develop presentation **Ambulance** scheduling system

A SYSTEM to streamline amhu-lance scheduling has been de-veloped by UCL (Systems), s com-pany formed within UCL orthern to specialise in applica-

The scheduling system is an at tempt to curh a massive daily shuf-fling of paperwork, according to John Ashley, managing director of UCL (Systems).

Using UCL's system, requests

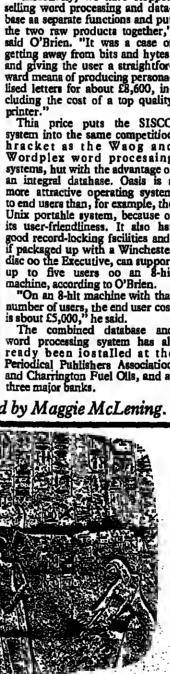
an Ultimate minicomputer system, and scheduling cars be left until the last minute. An automatic pre-

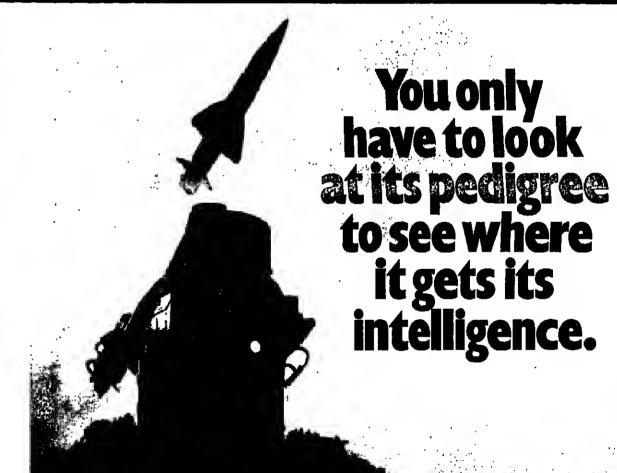
pitals and ambulance routes.

Each ambulance depot is given a printer, and dials up for the day's schedule of drivers, passengers, times and destinations in the morning. The controller can then adjust the routes to cater for emergency calls by radio control during

osts £50,000 including both ardware and software, has heen nstalled in three districts so far.

It runs under the Pick operating system on Honeywell Level 6





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You are invited to attend one of three informal luncheons an insight into business in Yorkshire & muni 28th September 1982 The Petrochemical Industry
An analysis of the fastest-growing energy and petrodesis centre in the U.K., and the services and support the region the industry. Guest Speaker: Michael Mong-Hansen CIBACOM. Chemicals Ltd.

29th September 1982 Advanced Technology As technological awareness increases, companies are finding it harder to evaluate the advances that have been made. the light of their own needs. This region, however, abounds it consultative aid. Guest Speaker: Professor M.G. Mylrof, Bradial University.

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Yorkshire & Humberside Development Association

Figures take a sharp upturn

Stock prices gain from rise

BROADLY, this has been a good stockbrokers and their analysts be-

ICL, stubbornly stuck at 55/56p for most of August finally began to move up again as the forecasts of 1625,000.

The shares table, which is specially compiled for Computer Weekly, shows

selected computer companies that reflect the state of the computer industry.

week for most computer com- gin to be re-shaped.

HULL system house AIM bas ments with DEC for general busi-achieved record turnover and ness applications in the Humberprofit during the year ending 1982.
Sales of £3.5 million were 20% side and Yorkshire areas, and with Datapoint for kit to be supplied

tive, claims that the company's Charter package, designed to assist solicitors with administration, bas become the leader in its field.

Telfer also says that the AlM office in London set up at the beginning of the year contributed highly to the company's excellent

son grocery chain, which is based in Hull.

Although AIM is breaking into a number of competitive markets, Telfer is confident that with five offices open in the UK by the end of the year he will achieve sales of at least £4.25 million in 1983. The company has signed agree- package.

panies, although the general rise in

the world's stock markets accounts

25% from 30/33p to 40p, on a com-

bination of takeover rumours and

City hopes that the figures due this

week would not be as bad as the half-year loss of £1.4 million lm-

SHARES TABLE

Quest of Dorset rose an effective

for much of the gain.

up on last year and profits rose a smart 121% to £177,000 from (an admittedly low) £80,000 in 1981.

Clive Telfer, AIM's chief executive a clive Telfer became managing director at that time.

Prior to its existence as an independent company AIM was a classlc case of an in-house company computer system which was so successful at selling time that the parent floated the computer sec-

AIM's first break away from the AlM is part of the William Jack normal bureau system came when the company discovered that some local solicitors from Hull were sending their data for processing to London, and waiting for five days

to get it back.
Telfer and his team investigated
the legal marketplace and from that basis developed the Charter

The ICL year-end is September

30. and current published

NMW rose sharply from 90p to

118p in recent weeks. The com-

pany is due to place its shares on the Uolisted Securities Market

within the next two months and

forecasts range from break-even a

the way up to £20 million profit.



BAUER . . . confident about the second half.

FEELING the first draughts of the recession, the Californio software supplier Informatics General Corp has had to report a 25% drop in prufits three months after going

On turnover up 13% at \$39.8 nullion for the secund quarter of 1982, IGC made \$614,000 compared with \$823,000 in the same period of 1981.

ity has caused "a feet slowdown in a number of my Profits at Informatics hove never been exoctly high, however. In the 12 months ended June 30, 1981, of our higher priced when Bauer remains confident duct on turnover of \$131 million the corporation made \$4.7 million after tax. This is a net morgin of 3.6% on sales, nr just 6% before

In the longer term, Burt ticd his company's return to But the slide which has beenme mat growth to an important so pronounced in the secund quarthe economic situation.

0 to 60 without shifti software.

MICRO NEWS

Slide gathers speeda 'Ignorance, confusion' typefy network market

works of personal computers is all things people already do, not ways wrong, claims a study* of the impact of personal computer local of doing something they have not even thought of.

The atudy concludes that system software should be simple popular theorising about the office of the future just does not match the actual patierns of use in the US, and that the hallmarks of the personal computer network market are ignorance and confusion.

Unlike the usual image of large emulate protocols such as the IBM acrosystems linked into corsecurity. porate dataliases, the typical network in current use has two Apple micros linked to a 10-Mbyte hard disc and a printer, says the report.

What is more, the system is used very much as though there were no connection between the Apples. The conclusion Strategic Inc of electronic mail, distributed databases or sophisticated manage-ment workstations are premature. What the market wants is cheaper

accepted, fancy applications and faster data rates can be tacked on. One of the main points that comes out of the study is that networks like this are already starting

This implies that networks and

and low-cost, and let existing ap-

plications run unchanged. The

bssic needs include support for

Once these basics have been

taken care of and the networks

to take off, "The husiness is much more widespread than people realise," says Harry Saal, president of a leading personal compu-"Large companies like Xerox are vus selling networks for smaller

t. AM-1000F

2. AM 1000W I winchestor.

3. AM 10 L

on VCR Nickor

utilities and diagnostics

He feels that companies pushing simpler products, more in tune with what personal computer users want and can afford, are making much more impact on the market, even though Xerox's Ethernet has got a huge amount of attention, far out of proportion to its importence for personal computer net-

Figures from the study indicate that only two companies have made any significant inroads on the market. These are Corvus, with an estimated 1,200 Omninet installations, and Nestar with about 550. But the market is still young, and there are some 30 companies taking different moves to-wards various sectors of the mar-

The leaders, Corvus and Nestar, ter network supplier Nestar, address different problems - Cor-

ALPHA MICRO 68000-BASED SERIES OF SYSTEMS

128KB 256KB

42MB 2.4640 51.94B 3MB

51,358

 STO
 MAX
 STO
 MAX
 STO
 MAX
 STO
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 DISK STORAGE
 MEMORY
 SERIAL I/O
 SOFTWARE

 16MB
 40MB
 128KB
 256KB
 3
 3
 A
 B

spending huge sums of money publicising their complex products, but they really have little to show for it."

numbers of machines while Nestar aims at larger installations of micros. Saal feels the study's typical network in fact represents a typical network in fact represents a typical Corvus network rather than a typical personal computer net. His company's products are usually found linking 10 to 15

> In Europe the view of personal computer networks differs slightly from Strategic's American one. "For us in Europe, microcomputers go much more to business markets than they do in the US," says Colin Crook, managing director o Nestar's aister company Zynar, and chairman of Nestar. "We expect a higher percentage to go with

He puts Zynar's typical system at five or six workstations linked to a shared print server and at least 20 Mbytes of hard disc storage with archival back up.

*Impact of personal computer local are networks. Strategic Ioc. IPI, 134 Holland Park Avenue, London W11 4UE. 1895.

AMOS"

AMCO

CROOK of Zynor and Nessar . . . different view in Europe

GaAs chip produced

acturer Toshiba claims to have form an insulsting layer on it. developed a prototype of a com-mercially viable gallium arsenide

It is a 500-gate array and featween gates. This is claimed to be five times faster than conventional

Progress towards general use of m arsenide, which conducts faster than silicon because of its higher electron mobility, has been slow because of technical diffi-

APANESE semiconductor manu- ICs, and because it is difficult to But gallium arsenide devices are

extensively used in microwave applications, where the speed is needed to cope with the high fre-quencies involved, and it scems likely that the technical problems in manufacturing will be overcome, and change the domina tion of silicon in microelectronics.

Higher-speed processing is goal that most manufacturers ore chasing in silicon, and the availability of a usable material that is culties in growing the single inherently faster will u crystals needed to manufacture fuel the race for speed. inherently faster will undoubtedly

Apathy squelches plan

LONDON borough's effort to their response has been deafe ning microelectronic awareness to ningly silent. Very disappointing. local businesses is suffering - not The sort of support Dorey is so much from the apathy of the businesses it is trying to help, but rent space in the slowmon from the negative response of the where once Rolls-Royces were electronic companies that sold. The aim is that parts of the

prompted it.
The City Technology Centre was set up six months ago as a joint vcoture between the London Borough of Hackney and private industry, with support from the Departments of Industry and the Environment. Its aim is to help local businesses use microelectronies effectively and to attract new technology companies to establish in Hackney, close to the City.

"We set up as a response to the report from the NEDO electronics sector working party," says Roy Dorey, executive director of Citymicrucomputers, computer-aided design - and follow a coherent This will give a store of hardware allowing hands-on Dorey will be running - and a pool of people he can draw on to help with the seminars.

display area will be set aside for

- word processing, general

particular aspects of computer use

Citytec itself is installing an ICL DRS 20 system with four screens, Baric, will bring a similar system tee, "in encourage businesses to when it moves in next month. Daapply microtechnology. We had hoped for support from the people on the working party, but so far on the working party, but so far run a bureau centre there.

Micro News is compiled by Robert Parry.

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T Diablo

Datapoint recovers from order book problem

earlier this year of more than \$15 million of dud sales on its books, US mini supplier Datapoint has just about made it into the black.

BUBY BY BY BY

year.
Following an internal review into the high volume of returned machines earlier this year, Data-point reported a \$23 million loss in For the final quarter of 1981-82 it showed a net profit of \$3.3 million, which gave it a full year profit of company, this was to allow for an pany.

Following the review, which uncovered sales to customers which would not normally have met Datapoint's credit requirements, a the third quarter. According to the number of executives left the com-

backlog, which fell from 12 \$117 million at the end dist quarter, to \$96 million for the

first half of 1981. IGC president Walter k

says that reduced economic

ness areas, with many our

delaying decisions on the pub

second half, which he was

normally been a stronge and

period for the company.

Despite the upheavil, ha: Datapoint showed a like turnover for the year nit

> Alpha Micro introduces its 68000based line of systems. A line that provides a growth path

from a une-terminal system to a sys-And it's growth that doesn't sacrifice

line begins with the AM-1000, A desktop business system that supports two tiscrs and a printer, offers 10 MB of storage, and provides 128 KB of mem-AM-1000 offers you the kind of perlomiance not available from 8- and l6-bit systems, in other words, it out-

1. categories. You can go from a oneuser system with 128 KB of memory and 10 MB of disk storage to a 60-user

system with 3 MB of memory and fol. It's multi-user, multi-tasking and 2.4 glgabytes of disk storage A product line that starts so small and grows so large simplifies programming and technical support ellorts.

IOMB 4UMB

DOMB 2 403

A AlubaBASIC's AlubaPASCAL's AlphaLISP AMOS!

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If your business needs a computer, you need Alpha Micro. The Alpha Micro 68000-based line is the latest, most competitive

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timesharing, its device independence allows virtually any slandard terminal or printer to be easily integrated into any Alpha Micro system. You choose the exact conliguration thal meels your needs and your budget. Finally, AMOS is proven and field-

B Programming languages PORTIAN and COBOL, in addition to over 100 AlphaBAS6 ** tunkey applica

tions are available from third-party some es.

tested, running on over 7000 Alpha Micro systems installed since 1977. Service — International service and

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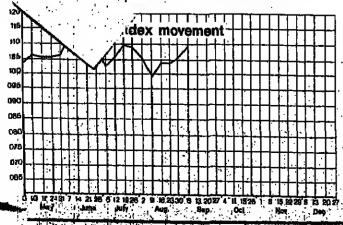
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Securities Market or under Rule 163(2)(a). 090 085 080

prices in London on Priday and in America on Thursday. The Sha fof the UK companies in the sable. Highs and Lowe have been adjuste



mpany News is compiled by Kevin Cahill

IT'S that lovely moment; you have finished amending all your soft-ware, youe Pet has curled up tentedly and from here on in its

"lie hack and feet up" time.
But life doesn't work like that. In comes your boss, and suddenly you need multiple terminals and two new applications and, really, s

But what about the 8-bit based applications you have spent all year amending and have only just got running for the first time? Well Larry Park, managing director of Quality Business Machines, has three answers, cost tailored to suit most users and their problems.
A long-term fan of the micro

and an early proponent of its use in everything, Park runs a combination of inventors' workshop, hardware design service and soft-

"It's a shame to leave that software lying aboue, each program capable of ninning on only one capable of ninning on only one conversion service, which will tatrain costs about £550, a relative conversion service.

He won't admit that his experience as a mainframe man — he helped found ICL's Dataskil —

So Larry Park has not invented the universal protocol converter. He and his inventive engineers do need to know what the software had anything to do with it, but his answer looks suspiciously like what we used to do when the mainframe overloaded. We stuck another computer (not in the hudget) on to our 2960 and called the new equipment n "front end

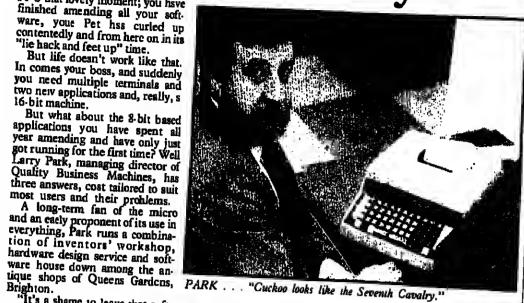
Using techniques like this QBM solves three types of problems. The Cuckoo makes a one-manufacturer software house indepen-

dent of a single vendor's hardware, hy making that software house's products available on any machine, mainframe or micro. The Datatrain allows any one

computer to communicate with other computers more easily. This includes micro-to-mainframe communication and mainframe-to-**DOWNTIME!**

Shall we

ever know?



need to know what the software plus a set up charge. was weitten to run on in the first place, and what you want to run it on now. There are a series of stanon now. I here are a series of standard Cuckoo interfaces, from CP/M. Based programs to 1BM, Sirius, Pet and so on. On the other hand if you have some obscure

you want your 2904 ICL Cobol to run then there is a set-up cost. Park points out that this one-off cost, which can be reduced by participation of those system houses

wanting to use the facilities, can liberate a software house to supply programs for any make of so many one-manufacturer software houses, the Cuckoo looks like

machine, or under one operating convert software written to run on vely small addition to a major piece CP/M, so that it can be run on any of software and a minor price in of disc," Park says.

So two years ago he got to thinking ahout the problems or 16-bit, and based on either somewhat the problems of 16-bit, and 16user is doing a one-off move, from

> Like most good things, there is more to the Cuckoo than meets the

By serialising poet connections the Datatrain can real time interface s whole range of currently incompatible machines.

One of Park's more disarming nonstrations has a Pet, Sharp, iBM and Sord microcomputer all running the same software on the same hard disc, in a real time multi user environment.

The Cuckoo has heen specifically designed to run 8-bit software on 16 hit machines. This, according to Park, is aimed at giving the huge Apple and CP/M based software universe direct access to the 16-bit world, particularly the Sirius and 1BM machine.

IT seems likely to me that education in programming in our achools is in a mess, and probably doing more harm than good in many cases.

Over the last decade two major areas, which I have termed cultures, have emerged - the profes-sional and the amateur culture. These can now be seen to be drawing apart.

The professional culture is conceened with developing programs of a long-lasting nature. These programs are usually fairly large and written by teams of programmers whose profession is peigrammers whose profession is peigrammers. marily the design and writing of programs. The programs will or and will need maintenance throughout a life cycle which may last for many years.

The smateur culture has generally the opposite characteristics. programs are usually small. and are often written by individuals who are amateue grammers - their profession is in a different field such as accountancy, medicine or chemical engineering, and they use the computer rocrely as a tool in achieving goals in their own field.

The programs are often very short-lived, perhaps used only once, and consequently need little or no maintenance and do not deserve significant documentation.

Because of the shoet lifetime of the programs it is oot vital that the anguages used are standard or stable. Important characteristics of such languages are the need for ease of writing and general "pro-grammer friendliness". Interactive use is almost inevitable and the programmer is usually also the end user. Examplea of languages aimed at the amsteur culture are Basic, APL, Mumps and Forth.

The professional culture has represented, so to speak, the mainstream of development, from For-

What a mess our schools are making of programming tran in the early 1950s through to
Ada now. The amateur culture is

science at school are at 1 dies;
tage since they have to be any

ewer, perhaps commencing with Basic in the mid-'60s and largely driven hy o need to make cheap computing power directly available to the end user.

An important foece in the development of amateue languages is user friendliness. The dcvelopment of professional lan-guages is driven by a quest for manager friendliness.

The reader may have noticed that Pascal did not occur in either list of languages. The status of Pascal is somewhat unusual, it was designed as an educational tool to illusteate the fundamental concepts of data types, data structures and algorithms.
Unfortunately Pascal is too aus-

tere. The type concept is not flex-ible enough to enable the writing simple proceduces to manipulate arrays of arbitrary size, a vital facility provided in all professional languages from Fortran onwards. Pascal also neglected separate com-pilation. Although individual im-plementations and the ISO standard have added facilities in these areas, nevertheless the language is sull not adequate for the writing of large programs.
But it was a tremendous intellec-

tual development and laid the foundation foe language development in the 1970s and in parcular laid the foundation for Ada. At the university level, the edu-

cation situation looks promising. The dilemma between teaching something practical but horrid like Fortran and something clegaut hut useless like Pascal could he resolved by teaching Ada as a representative professional longuage. Assuming that Basie has been inadvertently learnt anyway, it would be appropriate to teach Forth as a representative amateur

At the school level, the situation eauses some concern. Many uni veesity teachers have stated that pupils who have leaent computer

tage since they have to be tage tage since they have to be tage various misconceived idea. It largely because they are of Basic in a rather rottle fact and do not become swarf there are other possibilitie. It are also tremendous. are also tremendous compressures just to teach Base T

else is readily available a lorg For those not seeking a king education some general man of the possibilities of contra nceds to be taught. Such 1833 should be devised around in teur culture and Basic sens obvious choice. However let intending to concentur: science or mathematics in her form and then possibly really similar degree, learning Ber

not appropriste.
What is needed is to build of set theory and other shining thematical concepts which r taught at an early age and the to many parents at less, se rother pointless. Thus t in professional style language the around Pascal might be age printe. Mathematically see-children would also spior for

The teaching of a new substantial always difficult. Should a ! taught from an historical ta point or from the position of a rent knowledge? When a subject young, an historical viewer. scenis natural whereas whinks tures this approach is units

A final thought: The detect ninkers in our big organist. prohably belong to an age ; which did oot have much is computer exposure in &

Are these children insavete: damaging the minds of our & sion-makers?

Barnes is director of languages

Quadrant House, The Quadeant, Sutton, Surrey SM2 5AS

Thursday, September 16, 1982

DEC distributor list in disarray

SEVEN months ago Digital Equipment announced its grandly titled authorised terminal distributor programme and paraded top men from its five "official" distributors. The idea was to give DEC close control of a market which was in some disarray, with a large number of companies competing with the same DEC products.

But now the authorised distributor programme itself is in disarray, with some companies talking of pulling out and others complaining of being undercut by "unauthorised" competitors and even by DEC itself. Meanwhile, longstanding DEC distributors are still smarting at being excluded from the "authorised" list.

In short, as one authorised distributor put it, the programme is a disaster.

The people who are benefiting most from this disaster are users - or are they? In the short term they can get good prices by shopping around as authorised and unauthorised distributors undercut each other; precisely what DEC was trying to stamp out by introducing the programme.

But what of future support as authorised suppliers pull out of DEC's programme in disgust and unauthorised distributors lose interest as their sources of supply dry up For unauthorised firms which put in long-term orders with DEC at the start of the year, expecting to he put on the official list, now see those contracts coming to an end.

DEC was among the first big manufacturers to try to set up a controlled network of outlets by appointing authorised distributors. Others, including IBM with its Personal Computer, are expected to follow suit as a way of shifting large numbers of small products without a massive central sales

It is to be boped that others will learn from DEC's experiences. For the disarray in such big markets is good for no one: the manufacturee, the authorised and unauthorised distributors, some of which could be facing uncertain futures, and their customers, who risk being left in the

BEHIND the scenes at the International Conference on Computer Communications held in London last week, a debate raged on how to minimise the damage and maximise

Packet switching, digital transmission and integrated setvices all caught on in discussions at conferences, according to ICCC82 chairman John Whyte.

dustries now is to promote the healthy growth and widespread use of equipment and services which will benefit all of us without ruining some of us.

conference who questioned the value of information technology to society, but many in the world outside it remain to be convinced.

acceptance of office automation systems. Richard Clark of Joan de Smith Systems said that micros had caught on because games were available for them and therefore office systems should be trivialised to get them into use. Facilities hould be made available that users felt they got something out of, even if the organisation derived no immediate bene-

This may sound like anotherns to a commercial organisa tion, but at the same time it calls to mind a remark made by Kenneth Baker in his keynote speech to the effect that the relationship between work, education and leisure would have to change in a fundamental way.

work is. The trick now required is to develop computer and communications systems that teach us to generate wealth by playing at work.

1984 and all that **#**

THIS week's example of the strange things people say about computers was sent in by Wendy Marlow, of Feltham, Middlesex,

Computers chat in various languages but the four most common form the Esperanto of the computer world.

LETTERS

'A slur on most ops' Noughts and PHILIP HUNTER's statement (CW, August 26) ahout "an operator being only too happy with crosses

quired of senior managers.

ndustry, is an ever-increas

people who have learned their

ousiness principles first and now

have a clear idea of the capabilities

of DP technology. This hody of

Onyx in the US for Unix System

Ill development because Onyx has

more experience with the Unix

operating system than any other

made in the article is also mislead

some other route.

IN reply to Leonardo Bottaci's let-ter (CW, August 26) concerning Philip Hunter's July 29 article ahout my wock: Bottaci ohwhile he has a smoke and cup of coffee", is once again contributing an undeserved slur on the good viously has trouble with addition. If, as he claims, the sum of availname of most computer operators.

It seems to imply the oldfashioned Sixties theory about
operators being "dumb dumb
office boys" pushing huttoos and
stacking boxes of stationery. In
feet the operators of this day are an able choices in noughts and crosses "depends on where the first player has placed his mark (within his definition of symmetry)" and "there are either two or five different places for the second player to place his mark" (evidently symmetry no longer counts in the latter instance), then either three or eight choices are available for both players, despite the nine spaces that characterise this game.

None of this makes sense. But then logic has no place in Bottsci's fact the operators of this day are an intelligent specialist section of computer personnel, requieing knowledge of hardware, softwar utilities and JCL for the complex ties of modero day computers and

then logic has no place in Bottsci's scheme of ceality. All that Lurking in concerns him is winning (futile the wings arguments or noughts and

Bottacl ahould try solving the x 2 game (Prisoners' Dilemma) problem before tackling the 3 x 3 one. There, if his logic and symmetry peinciples are followed no one has any choice. But — and this is crucial — in any such situation the losing player has recourse in any return match, giving him the opportunity to win if there is any justice or fairoess. Both games, seen as a whole, represent a equally matuee and matched players that perfection has been chieved. That is one of many solutions that has escaped methemancians and game theorists in the past, irrespective of the maths or logic that were applied. It is the only symmetrical solution that mattees, no mattee what Bottaci

chooses to believe.

Belief is also a matter of choice. But, as shown, perfection is available to all, including Brunel cybernetics students. I'll be happy to elaborate on that if they choose to

MAGGIE McLENING'a article

Unix set to penetrate commercial

curate in one important respect and misleading in a number of

others. I must ask you to explain to

ARNOLD ARNOLD

operators about giving equal status

selves because we are both dependent on one another and should work together, not against each other.
Derogatory remarks of this nature roakes it harder foe us all to hridge that rift between the operations and technical sides. So please in future spare s thought for the

haedworking and dedicated

(Non-smoker, non-coffe

Yorkshire Regional Health

Micro payroll system I WRITE with reference to Brian

Pugh's Op Spot article, "Top managers in desperate need of advice on DP policy" (CW, August 26). Pugh need not worry. The I AM AFRAID your publication included three mistakes in the payroll article in Software Month (CW, July 15). The first was our telephone number which is Wisgovernment may not have got it right for us (ex-Tops husiness systems analysts) but they have for bech (0945) 64146.

industry. The course I was on was Our microcomputer payroll system (Wispay) is supplied on a lease basis which covers all upcomprised of people who recog-nised that specialists tend not to make the broad contribution regrades to the system and accompanying support services. The lease is typically 3 to 4 pence per person per week for a psyroll of 500 em-As our lack of DP experience makes it difficult for us to be accepted by DP professionals we will filtee back into industry by ployees and reduces to I penny pee person per week for 4,000 employees or more. The figure quoted of 121/2p is misleading as this is the charge if there are only hody of commercially-oriented

10 employees on the system.

Thirdly, the article implied that the Wispay system will only run on supporting CP/M, although pre-ferably a system with 8in disca in prepared to take up the expansion

1. C. DUFFY
Managing director
Wisbech Computer Services
Cambridgeshire.

pursuit of processing speed for its own sake (CW, August 26) comes as a most refreshing change. As a hardware designer as yet unbitten by the software bug, I have been reading your paper for years to try to learn enough jargon to converse with my programming collegates. with my programming colleagues

omes as a relief valve for the interknow it is a tool for the accelera and numbers are the languages of analysis — you can teach this atyle of thinking to anyone who wants to use it, and it's essentially seeial. Synthesis on the other hand appears to be unteachable; it's cre-

alive, essentially parallel and relies on the interaction of shapes. Let's hope the 5G machines emerge as tools for the acceleration f synthesis. Pechaps then the dis ausfaction will evaporate and

Going bust

with your software supplier place a copy of his source code, fully annotated, with an indepen-dent third party. The source code is to he released to you, the user, if and when your aupplier goes bust. or otherwise fails to provide a satis-

factory maintenance service. offer an escrow service.

W. S. ROTHWELL Assistant Company Secretary National Computing Centre

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Electrodata range.

he new MTS-2.

OFFICES are full of people quier as mice in the morning who be-come legends in their own

COMPUTER WEEKLY'S copy of the Gulf Telephone Directory had lain idle for several months, and, after our fiest attempt actually to use it, looks as if it could continue to do so. The beautifullyproduced guide falls down in one in meaning since it was first recorded for posterity by the great rather important area: pages 253 to While this may not seem awfully

significant, I can assure you it is The missing 33 pages span the of a long hard day. Step now into subjects hetween compressor suppliers and contractors — general.

Those familiar with the inflexication of the companies have tired lesser but nonetheless delicious catablishments around Ipm and computers has dreamed up a new companies have tired lows. Apple distributor Personal computers has dreamed up a new companies have tired lows. Apple distributor Personal computers has dreamed up a new companies have tired lows. Those familiar with the inflexi-ble sequencing of the English you will see that today's lunch is

bet will quickly spot that this effectively eliminates all entries

neers' company cars parked outside the golf course/pub/mas-sage parlour, deduct the number seen at user sites: divide the result hy the number of cigars smoked by Michael Blumenthal, multiply by the square root of Robh Wilmot's salary, add the number of IBM law suits, finolly subtract the number of users waiting for a BBC micro, and you have a number which relates directly to the reliability relates directly to the reliability of the hardware in question.

Well, at least as much as the manufacturer's claimed reliability.

Some lunchtime legends

lunchtime, only to sink into post-prandial lethargy in the afternoon. This description of the average white collar working day illustrates how the word "lunch" has swollen

essayist, lexicographer and gentle-man Samuel Johnson. In his day a lunch was a little

Reliability test
How to judge the reliability of sparticular firm's haedware?
Simple. Count the number of engineers of company cars parked.

Anything but a little snack. It is is a great bit institution.

The Sunday Times recently ran a feature on the luoch describing it as a great divide between the working and executive classes.

And Old Bailey jurors were recently warned of the dangers of lunching at pubs and cafes near recently warned of the dangers of lunching at pubs and cafes near recently recently warned of the dangers of lunching at pubs and cafes near recently recently warned of the dangers of lunching at pubs and cafes near recently recently warned of the dangers of lunching at pubs and cafes near recently ran a feature on the luoch describing it as a great divide between the working and executive classes.

An sward for the best essey will be presented at? You guessed it – lunch.

Liveware

court during their cases lest their sense of justice be perverted by

unscrupulous underwoeld bodies. Meanwhile lunch and journalists have grown an affinity for each other over the last 50 years to such an extent that Private Bye created the legendary hack "Lunchtime

with Zabaglione, that delectable Italian mixture of whipped egg yolk and Marsala wine sweeteni many an unpalatable half-truth from the lips of PR officials.

WHY DOES SO MUCH

COMPUTER ART FAIL?

Lunch can be a seductive affair

today's lunch is exteaned in ary notion. It has anything but a little snack. It is is a invited journalists to suhmit an es-

time I had between making mud ples and reading the *Eagle* was usually taken up in the sticky business of making model aeroplanes.

You know the ones — I/72 scale Spiffires and Hurricanes which almost, but not quite fixed trees to be a second for the second for most, hut not quite fitted together. There was always a roysterious part left over, surplus glue hung like polystyrene cobwebs from the

THE ANSWER'S IN

KEATS' THEORY ...

... OF NEGATIVE

CAPABILITY.

Prime project enigma

Jim Foy, ex-TME project man-ages at ICL, joined Prime in January, and it now seems that nearly all his cratwhile ataff have left Wilmot Enterprises for the greener pastures of the US-hased mini

Foy and his chums are based at Prime's Bedfoed R&D estab-

Getting stuck into computers

wingtips, and any attempt to paint the pilot's face resulted in a

Does this mean that the telecommunications giant intends to supply its IBM-compatible main-feames in kit form? If so, who is going to paint the operators' faces?

IF A FOEM CAN BE

333 Pm

A 'NO-NO' -

IT WILL BE!

STBER clear of Reading near March 13 for the street will be clogged with 5,000 runners put fing their way round a 13-2 half-marathon. And the mais sponsor will be Digital fundament, which has its UK hear quarters in the town. As well a putting up money DBC will not vide a computer system to time the runners and record results as interviduals and teams cross the finishing line.

the run

finishing line.

Stan Eldon, chairman of the san stan Eldon, chairman of the san sanising committee, said Realist was "crying out for a major running event". He said competion would include star shietes and incruners.

Chair

of what is actually going on - or

But if you were the owner of it

The team report direct to the Uk and Prime UK has little or so its

ageing operating system for mich called, for the sake of argument Primos, and you had his me ployed the entire project team of another manufactuter's rather good mini operating system, which would you do to conceal your to

WHEN I was but a young shaver, knee-high to a teletype, what spare time I had between making mud pies and reading the Bagis was usually taken up in the sticky business of making model aeroplanes.

Well, now one of the firms in the forefront of covering a million mother's carpets in glue has a computer connection. STC has bus to be sticky business of making model aeroplanes.

puter connection. STC has just rooved into the erstwhile head-quartees of Airfix in Kensington.

Turning work to play

the benefits of information technology.

The task facing the computer and communications in

Quite likely there were few delegates at this particular

One suggestion at the conference related to the

Education and leisure are economic activities, just as

If that is what comes out of ICCC82, it will have more than earned its keep.

readers the true position regarding the marketing of Unix-hased ing. Our packages for Onyx are portable to the extent that most were originally written for the Texas DS990 range of minis, and aystems in Britain, and set the The article stated that "CDS have already been ported once to Computer . . . is . . . the only company in the UK to have a System III liceoce." This is not their present environment. Further portability is no problem.

Unix marketing in UK

The headline of the article is grossly misleading. Unix has al-ready penetrated the UK market true. My company is a recently-formed subsidiary of Scan Compu-ters, which has been selling Unix-based Onyx systems for two years. LES PILKINGTON

We have a Westero Electric licence for System III, and have recently completed a Beta test for Westero Electric. Furthermore, it is worth noting that Western Electric uses Onyx Comput Tandem deal with Geest

WE WOULD like to comment on some of the points made in your based on our ADS 365 message some of the points made in your front page News Brief, (CW, August 12) Geest £2½m order for Tandem.

SPL International has had an OBM deal with Tandem since 1979 and the first machine international page 1979. switch. This Automatic Data Switch should not be confused the same initials, as our ADS 365

installed was for a commercial company. We have since supplied Tandem systems for seven customers in the UK and Europe besides having our nwn machine.

These and forward orders total over £4m of hardware. Some of

PAYE computers UK-built

WITH reference to your comments on the PAYE terminal contract (CW, September 9) I wish to atress that the DRS20 systems ordered for this project will be manufactured in ICL's UK fac-

tories.
The number of systems involved, though substantial, represents only a small proportion of ICL's terminal production expandity. The printed circuit boards.

will be made at Kidsgrove and assembly and testing will be carried
out at Letchworth as part of our
normal production schedules.

To suggest, as you did in your
newspaper, that they may be made
in Japan is responsible and completely untrue.

C. W. BEAUMONT

Director of Supply Division

with the Geest product, which has

product has been marketed under

that name in Burope for the past

C. G. SUMMERS

Sales Manager Information
Systems Division

Speed for its own sake YOUR editorial outcry against the

It seems to me that the fifth generation architectural debute national pressure cooker of half voiced dissatisfaction with compu ters. There are two kinds of thought, and the computer as we tion of the analytical kind. Words

hardware teams can go back t chasing "more bang per buck".

FOLLOWING on Cliff Dilloway's article "When the supplier goes buat..." (CW, September 2) another safeguard is to arrange

Such strangements have come to be known as "escrow" arrange-menta, and hoth NCC and CSA

RATES AND DATA DATA COMM. **TESTERS**

Find computer network faults

... on modems, stst. mux's, V24 interfaces or end to end.

PEOPLE I

Lawrence heads Valid sales in Europe

VALID Logic Systems of Califor-nia has hired high-powered sales director Thomas Lawrence to head its sales and marketing operations VALID Logic Systems of California has hired high-powered sales director Thomas Lawrence to head its sales and marketing operations in Europe. He will also serve as a vice-president of the US company.

In the newly created posioon of president and general manager in 1060

vice-president of the US company.

In the newly created posion of president and general manager lawrence will be responsible for the definition the definition, planoing and creation of European sales channels for the CAB (computer-aided engineering) system Valid is to announce in September. Scaldsystem is based on the Scald software and consists of a suite of design Intel for seven years.

ITT has established the position of executive scientist to recognise individuals for outstanding contributions in scientific disciplines. Dr pioneering work on optical fibre communications, is the first to take the title. Kao has been vice-president and discountier of the company from GEC president and director of engineering at ITT electro-optical products division for seven years. It is a permanent appointment, and for the first three years appointees are free to work at an ITT laboratory or unit of their choice in areas

He built up Apple's sales and marketing teams in Europe and as European vice-president and general manager saw a sales growth from \$16 million to over \$100 million between 1980 and 1982.

Before this he had been with

M Alex Kaebellek, formerly with Sperry Gyroscope, has been appointed production manager at

Birthday celebration TRAVEL reservations service

company Travicom has celebrated its fifth birthday and its growth from a six-agent, two-airline system to one with 420 agents connected to 28 airlines.

In our picture Peter Short John Sharvell has joined Rathdown Industries, a Unitech substituty, as marketing manager of all telecom products. He was formerly a sales manager with STC.

(second from left), managing director Eric Jarvis and Frank Manager (third and second from right) are drinking to the next five years with representatives from their "founder agencies".

Tom Leonard has joined Precision Software as project de-velopment director. Former posts include a five-year spell as manag-ing director of Finequote.

Management Resources has elected Andrew Gillon to its board of directors. He was previously company secretary at Rankins Fruit Markets.

Computer services manager at Golden Wonder and HP foods is Paul Hirst. He joined the company in 1974 as a senior pro-grammer and was made chief programmer three years later.

Two appointment has made at Utilux. Richard, has taken up the post of material manager and David State joined the company as a safe presentative. Tyrell was few safes manager at ASM. Sleight was a safes ensure Ross-Courtney.

Dave Sperry has promoted to international manager for Newburgh Recording. He was press Northern regional sales manager.

Goldeo River has manifolioliver marketing manager previously held a saler manement position with Dan Tontion.

Washington-based company Automated Company Systems has changed to the Applied Computer Science in

Computer Aided Marketing new company that has being to help firms use computation prove sales performanc. his based in Gloucestershire al keen to hear from commit which have proven proven can help sales forces mi management. Enquirie w h Miller (director) on (0453) 05

Joining Data Logic in Hamilton Rentals is Owes jets; who is appointed sales care was previously manager of the company's South-West sales area. for the company's range of his

■ Component product manager Steve Denton is to be promoted to systems product manager at Rapid Recall. He joioed the company two years ago as Northern internal

Previously a software manager with Olympia Business Machines, June Tucker has now joined Peachtree Software as a support MDS has created a new job that of manger of communa-tions — and appointed Dick Wil-kinson to the position. Wilkinson

DIARY

SEPTEMBER 19-24 Industrial digital and micropro-cessor-based control systems. IEE. Vacation School at Balliol College, Oxford. Details from IEE, 01-240 1871.

SEPTEMBER 23-24

Informacion systems - analysis and design working party. BCS. Open University, Milton Keynea. Details Guy Fizzer Id., 01-854 2030, ext 377.

OCTOBER 5 The impact of the new technology on management. Speaker David Pairbaim, director of NCC. IDPM Scottish braoch-British Institute of Management. Mer-chants House, 7 West George Street, Ginsgow.

Impact of new technology on management - challenges and im-

plications of 1T for the weight Speaker Ted Cluff, secrence eral 1DPM. IDPM Scottish and - Institute of Management la ture Theatre, College of the merce, Aberdeen.

OCTOBER 6 Introduction to Forth wie RCS Microsystems. Osterley Ca fort Inn, Isleworth, Midde.

OCTOBER 12 Visit to Thames Valley Computer Centre, IDPM London to Oxford bill Thames Valley Police Complete Control

JANUARY 5-6 Viewdata. Conference of state of the art. Institute at formation Scientists WP mid

CONFERENCES

The second Women and Computing Conference provides a fo-rum for women in the industry to meet and share skills and experiences. As well as discussion on technical topics, wider social issues technical topics, wider social issues and practical problems such as applying for jobs will be dealt with. Women only may attend. The conference will be held in Loodon on October 16-17. Fee is on a sliding scale up to \$7.50 for the two days. Details and registration forms from Women and Computing Planning Group, 49 Crofters Mead, Croydon, Surrey,

■ The Society's Natural Languight Translation Group is being meeting on machine translated dictionaries on September it Speaker is Professor First Knowles of Aston University Chairman of the Machine Trans tion Specialist Group of the Ass ciation of Literary and Linguis Computers. The Manager of the Strand, London, Further formation from Walter Golds (88 Barrington Road, Berleyke, Kent DA7 4UW.

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LIA complex office task which can take one III To potential dealers, Sord offers an week to learn on Basic can be completed on Pips in just five minutes.

🕆 Pips is indisputably a unique breakthrough in operator convenience. And typical of

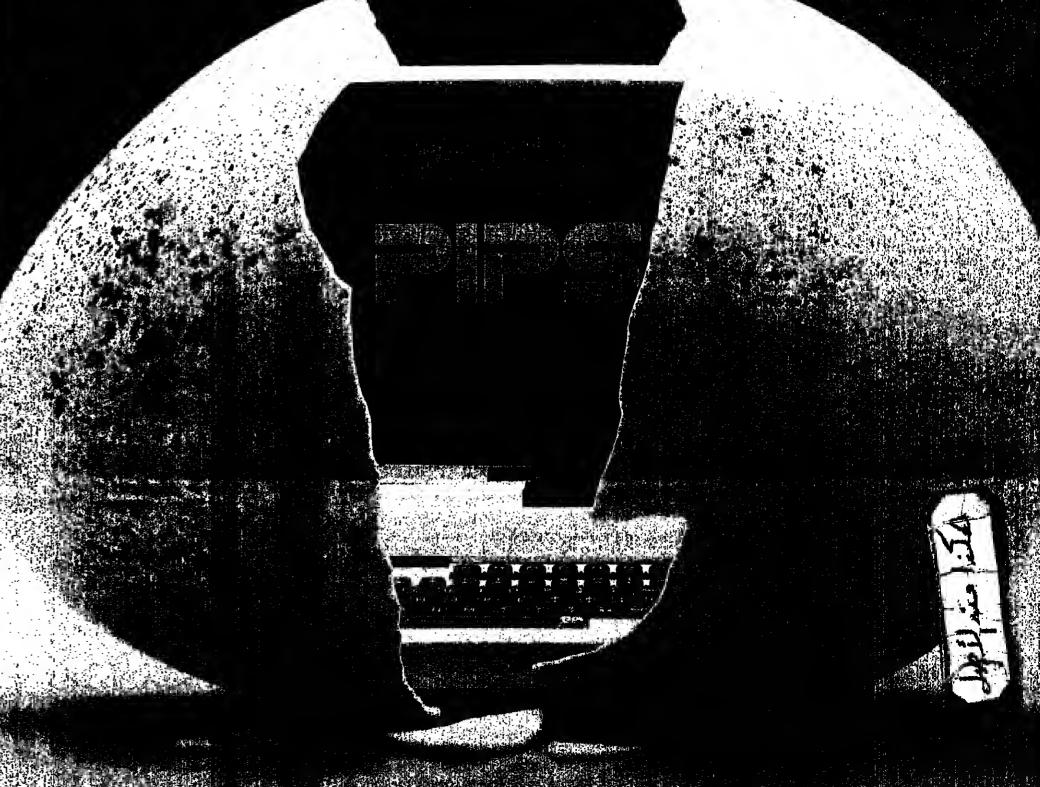
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IDA Ireland &

No room for computers - so they're digging a hole in the garden

ONE might think that installing a pair of IBM 4331s in a converted cinema would he a hard act to follow, hut in the case of Hill Samuel

The only course of action to Hill Samuel appeared to be moving the DP department to new premises — something the systems director Life Assurance, you'd be wrong.
The Croydon-based company is shout to dig up a sunken garden surrounded by public pedestrian subways, excavate a new computer room, and replant the garden nn top of it.

Until two years ago. Hill Samuel

- something the systems director in the strong views on:

"The DP function is part of the company, it should not he a separate department. If we went elsewhere, DP would be an adjunct to, rather than a part of, the business. The company revolves around the computer, so moving it

Until two years ago, Hill Samuel nwned the Lowndes-Ajax bureau, and ran its work there in batch mode, sending vans loaded with printouts from the mainframes printouts from the mainframes going to and forth, A move to online working resulted in the acquisition of two 431s for installation.

At the foot of the tower block line working resulted in the acqui-sition of two 4331s for installation

450 square foot private cinema, complete with sloping floor. The console was installed up on the 16th floor to enable the systems staff to keep an eye on things.

One advantage of having the three sides by rosus is a note in the ground with pedestrian suhways running round the outside. The central area is grassed and it occurred to the company that here lay a possible location for the expended computer room.

staff to keep an eye on things.

One advantage of having the machines in the basement of the building where the users worked was that all the VDUs could be machine room came about. The connected as locals, rather than area is large enough to house not having to use modems. Nnt only only a computer suite with three did this free Hill Samuel from the 4341s plus peripherals, but a vagaries of British Telecom, but the increased line speeds made supply of oil, and batteries for the than one second.

But the larger part of the workload, 80%-85%, was still handled by the bureau in batch.

What do the operators think of working beneath a flower bed? Well, there have been no complaints. There are no operators. Any build-up of work at the home site would mean a hardware upgrade, and the cinema was already packed as timbily an abaready packed as tightly as the engineering clearances of the 4331s would allow.

(For those of you unfamiliar with these devices, the hackplane hinges out as a single unit, practi-cally the same length as the proces-sor cabinet itself. Buth ends must be kept clear, nne for the microcode disc drive, the other for power switching. The end result is that although the machines appear to be compact and space-efficient in the glossy brochures, actually installing the thinga leaves an inor-

around the computer, so moving it away made no sense."

sition of two 4331s for installation at the Surrey headquarters.

The only room available for the machines lay in the basement — a 450 square foot private cinema.

panded computer room.

And so it was that the idea for

What do the operators think of

have no operators," says produc-tion services manager Calvin Bird, "for the simple reason that we don't really have a job for them to

Wright concurs. "Good operators have a great technical capacity, hut spend most of their time doing dull jobs. Take out the routine work and you can utilise that expertise in other areas.

"It's exactly the same with programming. You still need one or two experts for things like CICS, but the bulk of the work is boring



PUZZLERI

MY wife went to a sale last week. When she got back I asked, with some trepidation: "How much did you spend, dear?"

Not wishing to answer directly, and knowing my penchant for puzzles, she replied in teasing fashion: "I came back with exactly half my money unspent."

"But how much did you spend,"

l persisted nervously,
"Well, I ended up with as many
pennies as I had pounds before I
went to the shop and half as many
pounds as I had pennies before,"

ahe answered cryptically.

How much money did she take to the shop? See page 54 for solucomplete range of hardware peripherals including



Colvin Bird of Hill Samuel. Under the grass is the future site of the assurance company's DP operation.

days of mystique surrounding computers are coming to an end."

To illustrate this point, Hill Samuel employs part-time staff to deal with the small amount of petimberal handling still carried out. pheral handling still carried out.
Backups of the fixed disc drives to tape are performed by a retired policeman, a redundant British Telecom worker, and four married

formatting a much simpler and less

systems manager John Coward.

"We prefer to have a few good

people rather than lots of average

age programmers — the ones who can get by on a little Cobol knowledge at the moment — and

There will soon be a lot of aver-

"Our aim is to get three times as

we do not see ourselves taking on staff in this category," adds Wright. "More and more of the dull, routine tasks are being taken over by the machines or clerical staff. There will always be a need for really good technicians. but the background, and the tasks they perform are peompted by the operating system in a user-friendly for really good technicians, but the

C sommodore

At £299 its very little. At 64K its very large.

have accepted the job if they'd eventually dn doing," says Bird, "hut now they've got a joh much more interesting than the run of the mill clerical worker has.

"They're perfectly eapable people: they just don't want a

the users themselves — each de-partment will have a printer and will only produce hard copy as and

autonomy enjoyed by the wen.

kithag of tools for usen," as Wright. "A lot of the take a delegated to the users - the arto rial department use APL not than getting us to develop Cali programs. They've taken his is ducks to water."

When the third 4341 is install

in 1984, there will be one make Turn to page 17

WORKPLACE

A hole in the garden

From page 16

running the online service, one on batch, and one for the deelopment staff. There are 25 evatems staff at present, increasing to 40 by next summer.

The advantage of having separate machines is that you can have iBM engineers crawling all over one of them while still providing a normal service to the users," says Wright.

The machines are run 24 hours a day, seven days a week, with IBM engineering cover on prime shift only (and IBM is just across the road). Wright says that the hardware is very reliable and estimates the mean time between failures as two years.

"That means that one morning every two years we can expect to done. We can live with that."

But with no operators, and not even a dedicated systems programmer, who reconfigures the system in the event of a failure? The facilities group, part of the dealing with the user facilities, like



puter operations can now provide a worthwhile and technically challenging career path leading to the most senior levels of data proces-

says Bird, "and we can reconfi-Indeed, today's operations mangure, re-IPL and get the service running again in 45 minutes."

In the event of a more aubstan
systems manager, and it is not at all uncommon to see staff at this

tial failure, Hill Samuel will have both warm stand at the level swapping between operations Lowndes-Ajax hureau, and a cold and systems development.

"The real problem would be trying to catch up with the backlog," he adds. "If we were down for three to four days, it would be like APL, down thols and rush running up a down escalator."

genuine career path

cant developments of recent years.

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No longet a poor relation to

HOW COMMODORE PIPS APPLE.

Real typewriter keyboard YES (66 keys) YES (52 keys)

range of responsibilities including systems programming, database administration and communica-TO the career-minded DP profes-sional the expanding role of the computer operations department has been one of the most signifitions network control.

Now, operations provides a

A good example of these new responsibilities is the joh of operations analyst, a position best described as the operations equivalent

of a systems analyst.
Essentially, the operations analyst provides an interface between users (including the operations department, which is a user in this context) and systema development

However, where the involveends when a project goes live, the operations analyst has continuing responsibility for the support of roduction systems.

Why, I hear you ask, is there a need for operations analysts?

Additionally, the typical opera-tions team has now shaken off the Unfortunately, it is a fact that machine-minder image and is or-ganised around the broader computer systems, just occontext of providing a rotal service (i.e. working computer systems) to

YES

NO.. NO

YES

NO

NO

YES

YES

YES

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YES

YES

YES

YES

the second part of our series on changing job functions and titles, by Lss King.

This has led to a much broader reasons including machine failure, incorrect data, programming erincorrect data, programming er-rors or, possibly, because of an "R" in the month (seriously, many systems fail because of unforeseen and therefore untested conditions,

such as a 53-week tax year). in theory, such failures could be velopment staff although, in practice, it is extremely difficult, and quite dangerous, for an analyst or programmer to pick up unfa-miliar work producing quick fixes

to solve the problem. The operations analyst, however, is a Jack of all trades who ment of the systems analyst largely co-ordinates all elements leading to the smooth running of the opera-

He, or she, would normally be given specific responsibility particular applications from the early stages of systems dewith the planning of machine loadings, data preparation require-ments and other resources essen-

dal ro production running. Once systems testing is complete, the operations analyst, in his role as user department representative, co-ordinates acceptance testing and the creation of the procludes JCL writing (snd fine tuning), the preparation of operations manuals and the definition of reco-

When the system is in producoperations analyst becomes first-

Using available diagnnstic vely identify the source of the problem and to nrganise appropriate corrective action, calling in specialist expertise, as necessary.

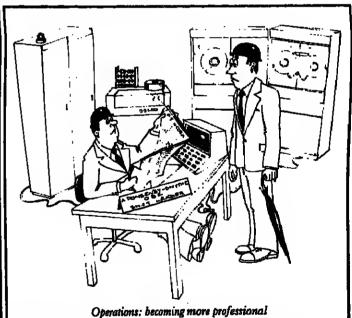
Direct action would typically include informal user training, cot rection of data errors and the recovery of current files while systems, programming or hardware errors would almost cer tainly be "referred".

The job of nperations analys touches many other areas, including performance monitoring, disc space allocation and the commu nication of "suggestions" for systems enhancements in reducuser bottlenecks.

To obtain a shop-floor view of the operations analyst job, I spoke to Keith Fox, whn worked for five years in the area of operations support before landing the plum job nf communications network manager with the South-West Thames Regional Health

To quote Keith: "The role of the operations analyst is vital on any large computer site. When the user wants a system, he talks in the systems analyst and when he's got one, he talks to the operations ana-

ideally suited to any operator with flair and initiative, the bulance of very/back-up procedures. all-round skills to he gained providing a natural progression into the area of operations manage



Workplace is compiled by Philip Hunter and Andrew Thomas.

This is the new Commodore 64 Personal

It costs £299. Not bad for a brilliant piece of technology with a 64K memory.

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the Apple II, and a coupon. The rest is up to you.

1. A total memory capacity of 64K, 38K directly available to BASIC. When not using BASIC. a full 54K is available for machine code programs. 2. Interface adaptors will allow the use of a disk units, plotter, dot matrix and daisy wheel printers, Prestel communications, networking much, much more.

The from Commodore

3. A complete range of business software including word processing, information handling financial modelling, accounting and many more specific applications and many more specific applications. specific application packages will be available

4. Other computer languages such as 100.
4. Other computer languages such as 100.
UCSD PASCAL, COMAL and ASSEMBLE in being developed. Existing VIC and 40 column BASIC programs can be easily converted.
5. The powerful sound chip gives 3 to independent voices each with a range of 9 octave independent voices each with a range of 9 octave user control over music envelope, pitch and pulse shapes provides the ability to make working the shapes provides the ability to make the shapes provides the shapes provides the ability to make the shapes provides Commodore 64 sound like a variety of mile

instruments, solo or in harmony.

6. 62 predefined graphic characters plus full alpha numerics with upper and jower full alpha numerics with upper and jower full alpha numerics. letters, all available directly from the keyboar

and displayable in normal or reverse video in any

7. 40 column by 25 lines colour display. in high resolution graphics mode, a bit mapped screen gives 320 x 200 individually addressable

8. The dedicated video chip allows the use of high resolution multi-coloured "Sprites" (moveable object blocks). Sprites can be moved pixel by pixel, independently of anything else on

9. Sprites can also be set up in 8 "layers" giving full 3 dimensional effects with, if required, automatic collision detection between sprites and any other screen object.

10. Machine bus port will accept ROM cartridges for many applications, including business, educational, home and leisure software.

11. A second processor option using the Z80 givesthe Commodore 64the ability to support CP/M.

k commodore

For more information on the powerful new Commodore 64, and the address of your nearest Commodore dealer, telephone or write to us at: The Commodore Information Centre, 675 Ajax Avenue, Slough, Berkshire SL1 4BG. Telephone: Slough (0753) 79292.

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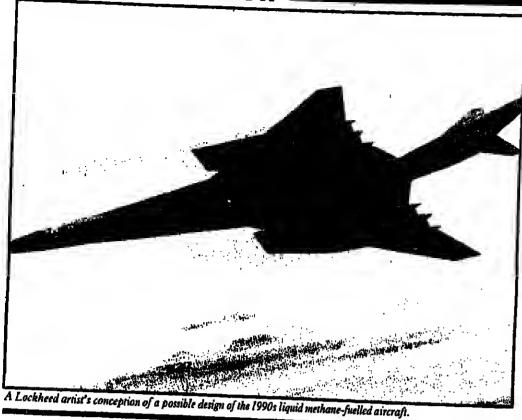
by Dr A. L. Kldd

This study provides a comprehensive review of the literature concerned with the design of interactive men-computer dialogues. Firstly, the problem of the men-machine communication berrier is introduced. The important aspects of user psychology are briefly nutlined and the study stresses the need to create 'user friendly' computer dialogues, i.e. dialogues which are compatible with the psychological characteristics of the intended user pepulation. Secondly, it acts out design principles, from the literature, for the development of more 'user friendly' computer dialogues in a wide range of spolications.

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FARNBOROUGH SHOW



You need computers to design 'em, to fly 'em, to land 'en

Kevin Cahill sees technology take off at the Air Show

IN the aircraft industry there is one thing you can be sure of. Whatever you do, you need

computers.

"You need computers to design 'em, computers to fly 'em, computers to fly 'em, computers to last 'em," as one RAF man put it.

At Farnborough Air Show this year, there was a record collection of the computer-based devices needed to get an aeroplane to gether, to get it safely off the ground, and safely on to it again.

There was also a record collection

UNIX: based software from INTERACTIVE SYSTEMS.

ustomers, deafers, agents and personnel, uns on PDP41/RSX11 and Honeywell-Bull Mini G

of the devices, all computer driven, that you need if the way you want an enemy aircraft back on the ground is in tiny incandescent Harrier - employed in fam: battle areas, with scarce hi supplies and a high need for mi

Naturally enough there were a lot of micro-driven devices to hang out of aircraft so that you could turn anything you didn't like on

eation of micros, mostly eight-bit, it was something of a pleasure to come across a number of devices which have at least as many civil as

Sadly, either the staff manning the missile stands did not know just what micros drove their deadly wares, or for security

ranti stand at least knew that the micro in the Ferranti tactical mission planner, called the Tacplanner, called the Tacplan 2100, was an eight-bit device specially designed for the application by Ferranti.

Tacplan, written in Coral 66, is

clever way to work out the best oute for an aircraft, tank or premissile, to carry out its

Data on the route to be taken is ntered into the system simply by placing a pair of electroniagnetially activated wires, contained in a neat plastic case, over the turning points chosen on a map, which is laid over the Ferranti Autoplun

The system, which is floppy disc riven, carries a 256 Kbyte store

When the map being used is laid out on the plotting board, two reference points on the map, expressed in longitude and latitude, are entered in the system.

The coordinates and the map

The co-ordinates and the map cale enable the system to establish the table so that the placing of the cursor is correctly translated into

When the turning points in the nission are established, the system hen prepares a flight plan, which is output primarily on to whatever form of input, mag tape or solid state is to be used on the inboard avigation system.

In the course of establishing the sion route other data such as aircraft type, fuel carried, weapons oad and so on, is also entered. When the planning is complete a hard copy printout is prepared which can be given to the pilot, along with his magnetic tape

According to Ferranti, the system can be used to prepare a mission plan with 20 turning

there is a rapidly growing dear for more advanced computer is software in the field of fit A complete simulator sille clude a moving platform still tiles, dips and rolls to give the trainee all the benefits of fit without the attendant risks to be and soul if he or she gets it store To drive the controls and co

platform, and the graphia displays which a computer her generate on the "cabin window of an advanced military place a execution rate of over 10 ber. 32-bit operations per second

In modero battles, pariculations involving aircraft like a

reaction and redeployment - It-plan is indiapensable. So far the RAF has bought It

At a more sophisticated lat

the systems.

So far most ainiulators are me rame linked, but Geim Electric's Link Miles Dist. started building micropaxas based simulators in 1979.

The company says that their micro driven simulator was livered by them late last years: l'innish Air Force to train country's pilots in the use di British Acrospace Hawk trains

velopments in the simulator &: are in the area of computer-grant ated images.
This has given rise, 28 E3
USAF official at Famborough?

it, "to the 20 million simul accompanied by the 50 miles computer generated inth culties involved, both the mility and the various companie

are spending millions of dollars pursuit of ever more sophistical in Image diaplay.

Many pilots resent the and of time they are oow required spend on the ground in simulated

One of the officers guarding Lockheed B1 bomber wh to he UK for the first time for it Farnborough Show, pointed that the plane had cost the part of a million dollars in alone to reach the UK.

about 200 in electricity." if the pilot flew the simulator into



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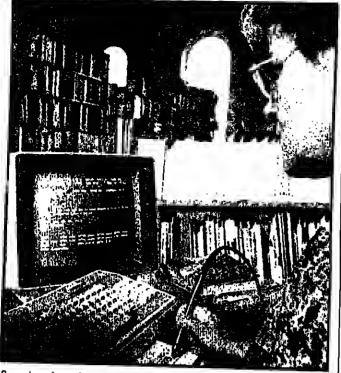
PRODUCTS 11

Bar code system for library

automating its service with an online computer system, and has chosen Photographic Sciences' bar codes for the task of labelling the 800,000 volumes currently in stock together with the associated record cards and the 90,000 new books acquired each year.

As the centre of its automated service the library is installing a Canadian-developed Geac 8000 system at County Hall in Taunton to be linked online to automatic checkout facilities in seven of its 33 branches and at HQ. In these selected locations, books will be checked in and out of the system hy means of light pena linked to terminals. This scans the bar code on the book and the reader's card, automatically entering loans and returns into the main database.

The key factor in the efficient working of this system is the reliale input of data. Machine readable bar codes were the obvious medium and Photographic sciences, formerly Harland Data Systems, was appointed supplier. In addition to generating sequen-tially numbered bar codes, in high volumes, the rompany is able to volumes, the rompany is able to image and print text on a variety of materials, including self-adhesive ticket system and in providing eyematerials, including self-adhesive the public.



Scanning a bar code to enter a book in the computer-based catalogue

labels, to a quality unattainable by dot matrix or impact printers.

This was an important factor in the aelection process, since the lahels were required not only to identify books and readers via the light pen, they were also to be used in file creation, in heing companble with the existing Browne issue

water headquarters, to be used b the staff for the creation of the datahase, and a further 30

Photographic Sciences (CW), Phoenix House, Amsterdam Road, Sutton Fields, Hull, North Humberside HUS 0XP. Tel; 0432

these, three will be in public use.

Delta network is aimed at Burroughs market

another manufacturer.

data processing functions.

mode data entry, or for message

switching/telex networks; local

storage on floppy or Winchester discs with Delta's own File Man-

nounced a network terminal aimed the system at new and existsystem based on ita recently re-

includes a configuration which is aimed specifically at the Bur-roughs B20 market and has a starting price of less than half that of the B20, saya Delta.

The 2000 Series features com-nunications facilities for handling Surroughs and ICL protocols and there are plans for adding IBM, DEC, Univac and others shortly. There is also a cluster control for up to eight workstations.

The video terminals at the heart of the new system are the Delta 2200 Series and the 2830, around which Delta has designed a systems concept to enable each to grow from a standalone terminal device to a network system according to specific user requirements.

Delta Data has designed the 2000 Series system and its interrelated software to provide an inexpensive starting point for network operations, so that extra functions and facilities can be added, when required, to allow easy progression to distributed Apart from the Burroughs emu- agement System, giving block

niode access to the database in processing facilities using G; packages or user applications grammed in Basic, Cobol, Fair or Pascal; hard copy point locally or bost control including proceding compatibility and tenic chitatering. ing network users requiring steady expansion, as well as to those seeking to increase the scope and complexity of the terminal task; at users of heavily loaded networks where the wnrkload needs expanding without changing the mainchiatering.
The video terminals that he frame; and at users seeking to avoid terminal redundancy when n

up the new systems are the Der

mainframe change becomes in-evitable, particularly when the 220I — a general purpos sik display terminal for transming change is to a mainframe of and telex) terminal for mean monitoring and preparation of able for message switching of store and forward processing to The Delta 2000 Series has applications at all levels of networking, ranging from a single display teran intelligent workstation incorpo-Delta 2203 - a forms modelar rating mass atorage printing and local processing facilities to clusters of workstations providing a variety of multi-end user text and nal for high volume, field wir sing; and the Delta 2830 -Burroughs emulation terminal

The Delta Disk Unit ofer This applications flexibility is stepped storage options of act 1.58M bytes on floppy discusi; to 18.7M bytes on high polar the result of a matched set of user friendly functions including full feature Ascii display terminals ance Winchester discs. for oriented for text and data entryhardcopy output, the system was apport a wide choice of do no /information retrieval, for forms rix and letter quality serie no

City, Herts. Tel: (07073) 3361.

PRINTERS AND TERMINALS

Boris Sedacca opens this four-page feature with a look at the European scene

Distributed processing set for a fivefold rise

The 360/370 arehitecture has

many properties which seriously

constrain its ability to support in-

formation systems in the future,

By far the largest market segment i

more expensive and software de-

velopment costa relatively lower,

become indefensible and impracti-

The OS operating system and

the OS/VS versions have been huilt upon it, along with related software, such as CICS, TSO, and IMS, which provides capabilities

not originally designed into the

IDC asserts that the architecture of the IBM 8100 and the DPPX

operating system can be seen as a fresb start for IBM. The invest-ment which IBM has made in de-

veloping the 100 and DPPX is the biggest it has made in a new archi-

tecture aince the 360. And, despite

the fact that the 8130 and 8140 are

8100 contains festures that both

simplify the joh of operating system software developers and

also make possible the implemen-tation of key operating system functions.

Turning to the printer market, IDC expects growth to average 22% per annum between 1980 and 1986. (See Figure I).

By far the largest market segment is the serial dot matrix printer which during 1980 faithfully

served the printer terminal market

Turning to the printer market,

operating system.

the serial dot matrix printer.

IT is no longer clear just what a terminal is. In earlier days, the old-fashioned teletype embodied everyone's perception of a terminal. should the \$100 prove successful.
"The IBM \$100 embodies the most radical development in com-puter system architecture from IBM's Data Processing Division (DPD) since the introduction of With printers, it is an essier the 360 and OS in 1964. It has copy output. But a terminal can be important implications which go far beyond the 8130 and 8140 models which were initially an-nounced in October, 1978." anything from a simple portable hand-held data capture system to an 1BM 4300 series mainframe connected to a larger 308X series

mainframe using the latter's ex-tended architecture feature. Today, the terms "terminal" and "distributed processing" are almost interchangeable. According to a Eurocast study carried out hy nents, of secondary direct access International Data Corp, the distributed processing market was storage, and of software deputers, but clustered processing

largest part of this revenue. The total distributed processing revenue from shipments for its three main sectors - minicomputcrs, small business systems and clustered processing terminals — will rise from \$500 million in 1980 to \$2.8 billion in 1986, says IDC.
After a slow start IBM's \$100,

terminal systems now earn the

classed by IDC as a clustered processing terminal system, is beginning to make its presence felt in the marketplace. Some 800 clus-ters were shipped in 1980, but this figure will show a dramatic rise to 17,000 by 1986, or an annual growth of 86%.
"The decision to implement

distributed processing remains firmly in the hands of DP departments," says 1DC. "In less than 50% of cases were local users con-

The top 11 European vendors of clustered processing terminals together coostitute almost 80% of the market. Philips is the major vendor with 15% of the market, velopment play a key role in alter-ing design priorities. System archi-tectures, which made sense 20 years ago, when hardware was but closely followed by Datapoint and IBM. IBM's position in the eague is due to the impact that the

Sloo is already having in Europe.

The number of screens attached to a clustered processing system varies widely between veodora, ranging from 2.5 to 70 plus, hut overall there are on average 5.5 screens strached to a system. In 1980 IDC estimates that 43,000 clustered processing terminal screens were shipped into Western Europe and that this will increase to 200,000 units by 1986.

The number of screens shipped into distributed data processing (DDP) ussge is estimated to be 50% of total shipments during 980 - a proportion which varies by country with France lagging hehind the reat of Weatern Europe, while Spain and UK are the leading users.

relatively small machines, the 8100 architecture is undoubtedly that of a family of processors of which "One important consequence of IBM's introduction of the \$100 is that it has galvanised the industry to look even more closely at DDP, After the initial over-reaction to the \$100 cave way to the After the initial over-reaction to the \$100 gave way to the realisation of teething problems, the industry may have to start searing itself up again to a product that la here to stay for some time," says IDC.

'In all the country markets, "In all the country markets, IBM's strategy of putting in test or pilot machines and getting the user hooked is paying off overall even though some \$100s are being sent back. This is a phased approach in that a number of users have already gone through a rigid/devalor. ready gone through a trial/develop-ment phase and are now installing and running production machines. At the same time new batches of users are emharking on the pre-liminary phase and indicating

the morning and the charles, fit

However, by 1986 IDC predicts that the desktop will take the bulk of the shipments - some 660,000

"One area of great uncertainty is how the future text processing market is going to be catered for. Undoubtedly there is a great growing demand for quality printout which is currently being satisfied mostly by serial character printers. However, the other technologies are aiming for a share of the market and there is likely to be a headon collision as serial dot matrix printer vendors in particular strive to develop correspondence quality products. 1DC expects that the latthe mid-80a as speed and price outweigh user reluctance in accepting "almost letter quality"

output, especially in a mixed DP/WP environment. lived up to the great expectation which has caught the imagination of so many in the industry. After a few notable failures, including 1BM's OS/6 offering, there are signs that more successful products are conting on to the market. Siemena is already achieving hulk shipments with its PT80 models and the Japanese are expected into this arena within the next two to three years. Long term success seems to be assured for this tech-nology as the demand for graphica and coloured printing starts to build up in earnest during this de-

It adds that the line printer market is far from its death bed. Boosts in this area have come from the influx of the low cost, versatile dot matrix line printers where demand is most strongly felt in the higher end of the SBS market. IDC predicts that the market for such printers is also destined for

problems have heen overcome. High priced page printers bad shipments of about 300 units dur-

position with printer terminal

ket in 1980 was cornered by Diablo, Olivetti and Qume who

ter market place with over 40% share of all units shipped. However, by 1986 the printers used with desktops will he in pole dropping into second position with

between them had over three quarters of the shipments. It is in this segment that the Japanese vendors – NEC, C. Itoh and Ricoh – have made their largest penetration taking almost 14%. However, al though they are expected to incresse their share in the 80s they could come across a atrong challenge from European vendora in the shape of Olivetti, Olympia and Triumph Adler. These European magufacturers have the opportunity of reaping economies of scale from their electronic typewriter acrivities where shipments of daisywheels are vast.

One area where low cost, low apeed printers are making a large impact is in the serial dot matrix market segment, says IDC. During 1980, the Japanese vendors made a strong showing capturing market. They are expected to penetrate this market even further with Epson and Oki Electric leading the way. In 1980 the US-based vendors

held over 50% of the serial dot matrix market with IBM and Cenike the aerial character market the serial dot matrix sector is littered with vendors. It is an area which has attracted a number of it is used exclusively on IBM'a

Figure 1. Printer units shipments 1980/86 W. Europe — by system type

mann-Tally and Oliveru. Some of these produce serial dot matrix printers mainly for their own systems. They tend to be SBS venbax, Philips, Kienzle, Nixdorf and Triumph Adler.

It remains to be seen whether IBM will make a similar move to other vendors and produce a high density matrix printing device to offer corresponding quality matrix

With regard to the word processing market, IBM now manfactur-ers its own daisywheel printer for use with the Displaywriter.

Another printer designed for use an ink jet printer, which uses con-tinuous stream technology. This was the first ink jet printer used standalone word processing system, the Office System 6. It fact so many users did not want the ink jet printer that IBM was forced to offer the Quine daisywheel. Because the printer uses dot matrix

usfied with its quality of output.
The IBM 3800 laser printer was first introduced in 1975, and has been reasonably successful. It was tion on the OS/VS systems. However the 3800 quickly ac-quired an offline magnetic tape. The printer uses continuous form paper and is generally regarded as

> In direct competition to 3800 is Xerox's 9700, which was an update on the 1200. The 9700 uses sheet feed paper and is able to operate as a word processor printer

launches tive games

The games are sold as cartridges

which can be plugged directly into the back of the Vic computer. All eature Autoload to take the user In Spiders of Mars the user takes

the part of a fly and must shoot his way across Mars avoiding the dreaded spiders and other flying creatures. The game features full graphica and classical music.

Renaissance is an Othello package with eight levela of play. Players can match the Vic or play each other. During the game, players can change aides, take back moves, and set up and play apecial

games.

Satellites and Meteors is an asteroids game with full screen display, no boardera and full

In Meteor Run the player must pilot a apaceship through the meteor belt and avoid or destroy meteors and alien saucers. To help the unwary, an early warning radar screen is included. In Cloudburst the player has to

save the earth from a storm of acid rain and mutant cloud hoppers. Ten levels of play can be selected. are priced at £24.99 each, while

Cloudburst costs £19.99.
Audingenic (CW) PO Box 88, Reading, Berks. Tel: (0734)

Network

THE video Touch Terminal from Touch Technology is a new development of the company's established Touch Terminal. The new terminal allows real time video input to be displayed on the terminal screen and freely mixed with diginary to the user a menu of points to touch, so giving the user a choice of options. With the new version of the terminal, a video freely mixed with diginary to the user a choice of options. With the new version of the terminal, a video freely mixed with diginary to the user a choice of options. With the new version of the terminal, a video freely mixed with diginary to the user a choice of options. With the new version of the terminal, a video freely mixed with diginary to the user a choice of options. With the new version of the terminal, a video freely mixed with diginary to the user a choice of options. With the new version of the terminal, a video image, The co-ordinates of the point touched will be relayed back to the host computer which can then interpret these relative to the host computer which the point touched will be relayed back to the host computer the known image.

The Video touch Terminal from Touch Technology is a new development of the company's established Touch Terminal does not need a conventional keyboard. It is driven by the user by touching the terminal server. This consists of a number of user-programmable "touch points". When the screen is touched, the terminal sends to touch the point touched will be relayed back to the host computer the known image.

The Video touch Terminal from Touch terminal from Touch Technology is a new development of the company's established Touch reminal affect in the wideo inpoints to touch, so giving the user is a choice of options. With the new version of the terminal, a video image, The co-ordinates of the point touched will be relayed back to the host computer the known image.

The Video touch Terminal from Touch Term

Audiogenic Package offers low-cost graphics

botics company.
Robocom says its package provides all the elements of computer aided design (CAD) from direct lnput origination of drawings through to a plotted output in colour, for less than £3,000.

Rob Welch, graphic designer and Robocom director, said: "Our

objective was to create a simple but complete computer graphics package that would be easy to use by engineers and artista alike, without previous computer experience and st a price level that is affordable by almost everyone involved in the

User touches the screen to input information.

Video touch terminal

The Robocom package is built around the company's Bit Stik in-teractive graphics system, the Apple II Europlus 64K microcomputer with twin disc drives; and the new Hewlett-Packard 7470 A4 size plotter. It incorporates full technical drawing facilities including special routines for dimensioning and the execution of schematic

It is not restricted to use with the 7470 plotter. It can support a wide range of plotters from A4 to A0 size and can interface with most of the major manufacturers'

nshe, Tektronix and Hewlett-

In addition, Robocom's design allows for step-by-step upgrades of the basic package into a sophia-ticated state-of-the-art system, ensuring that as a user's applications grow so the system can he expanded with simple add-on units to meet the new requirements.

The new package will be fea-tured on the Robocom stand at the Design Engineers Show (September 28-October 1) and Computer Graphica 82 (October 19-21).

Robocom (CW), CIL, Building, Goodwin Street, London N4. Tel: 01-263 3388.

Subsystem intended for a variety of machines

LATEST hard disc subsystem for personal computers from Indepen-dent Computer Engineering (ICE) combines the British-made Ro-dime RO 100 Series 51/4in Win-Quarterback 1/4 in cartridge tape

card, and is available for Apple II, Apple III, and a variety of Z80 and S 100 hus machines including Superbrain, British Micro, Gem-ini, Cromenco, IBM Personal

Computer and Sirius. The Rodine 51/4in Winchester disc drive, for which ICE is the exclusive UK distributor, provides formatted capacities of 3, 6, 12 or 20 Mbytes.

MTBF (mean time between failures) is 12,000 hours and there are no electrical or mechanical ad-

are no electrical or mechanical adjuatments. Features Include overlap seek, rotary head posi-tioner and integral microprocessor control with on-board diagnostics.

Control with on-board diagnostics.

The tape streamer uses standard in 3M-type removable tape cartridges which can store up to 20 Mbytes of formatted data per cartridge. The tape speed of 90 inches per second allows a 6 Mbyte Winchester diagnostics. chester disc to be backed up on to tape in a little over a minute.

Independent Computer Engineering (CW), 16/18 Littleton Road, Ashford, Middlesen, Teli.

Phone aid for children supervised adequately and mar-A PUBLIC telephone system

simulator for instructing educa-tionally suh-normal children has been developed by Plessey. The simulator consists of a specially adapted pay-phone, a standard handset and a control

connected to the British Telecom network. All facets of the telephone system are accurately simuared to enable children to receive comprehensive instruction in the

Apprentices developed the simulator after an approach by Winchelsea Special School where teachers wanted to familiarise pupila with the public telephone system. Previously, telephone instruction had proved difficult because children learning from public pay-phones could not he

phone code and number spec within the school. A main our l unit, incorporating solid an hlack chip technology, is occasion by the teaching staff and come. be a normal tele hut It has the added advaster Various tones can be simulated on the control hox and simples.

on the control nox and amperor for teaching and the children is given a preselected number ring. Even if the call is made into rective the teacher with the count box may still talk to the child. Pleasey Controls (CW) 7000 Dorset, Tel: (0202) 67516

Tape cartridge systems

A SERIES of multi-drive tape cartridge systems manufactured hy
Perex is being offered to OEMs

drive on the system in require
provide continuous logging p tridge systems manufactured hy Perex is being offered to ORMs through Sintrom Ellinor.

Named the Perez Perifile 9000 Series, the system employs up to eight ECMA 46 (ISO 4057) cartridge drives connected to a single controller/formatter, Using 6,400 bpi drives and DC300XI cartridges, this translates to a maximum formatted data capacity of 120 Mbytes per system:

9000 Series particular to unattended data capacity to unattended data capacity of Statrom Elimor (CW) 161.

Statrom Elimor (CW) 161.

Arkwright Road, Reader 120 Mbytes per system:

More Products on page 120 More Products on page 120 More Products on page 120 Mbytes per system: The controller accesses each

bility — as each drive no ridge filled to capacity institution of the capacity in the chain with a capacity in the capacity will not capacity and to unattended data capacity and capacity and

More Products on page

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of the industry's most popular printer and video terminals. And with our friendly approach, economical priong and technical professionalism, we'll help you achieve the very best from these high quality products. Telephone Ian Hill (07535 552) it is from the control of the con

1.4 12 portable printer: A compact Myb speed (150 cps) port the plant paper in poblic printer. The international distractor set given APL line through a set dot graphies. LA34 low cost printer VTIGI low cost VDU A low cost version of the VT 180, without it a enfoncement options, but with local echo (for use with non Diorical completion). A 30 cps printing to mines NSR and RO models. High functionabity with very first tip forms handling Det graphics capability.

VT131 fall feeture VDD

VT100 VDU

LA 100 lehter quality printer
A inglish yetsalde muchi function poteter. KSS
and HO myelet. Letter quality printing or jugh
apreid dirati printing at 240 gs. Dot graphics
and user selectable fonts. EA 120 high performance politics A 180 ope piteter with 45 last sceletable features for the facility HSP and HO inc has represent service
'In addition to selling reminds, we also rest
'In addition to selling reminds, we also rest
'Un better which are to selling the selling of the
your needs.'

The friendly terminal company



Robert Fenner investigates a project for a high-speed laser printer which never became a commercial reality

The singular case of the printer firm and the vanishing laser device

company called Documation. It made high-speed impact printers, and it sold them into the IBM plug compatible market.

The impact range, as the printers were called, had a maximum print rate of 3,000 lines per minute, and this, then as now, made them the fastest impact printers in

Documstion, however, had plans. The Impacr range was to be expanded, with a new top end model running at 3,800 lines per minute. More impressive still, the company was announcing its in-

There was one feature, in parti-

cular, that made the announcement impressive. The print speed claimed for the new machine was 27,000 lines per minute — faster by a wide margin than any other non-impact printer on the market. But the printer did not arrive

and, three years later, there is still no sign of it. IBM, Honeywell, Siemens and Rank Xerox domi-

company was announcing its intention to move into the laser printer market.

In the annual report published that year, Documation said: "Our engineers are completing development of laser page printers with a combination of more functions.

Documation's common atock was acquired by Storage Technology. Documation had been losing considerable sums of money before the merger, and by acquiring it by a fairning as smoothly as it might hope. As a result of increased compensation in the disc drive market, one of the company's strongest areas, STC has suffered from the Documation's common atock was

- European sales of the Impact range have doubled since the takeover, and STCa European subsidiaries, including the European wing of what was Docu-mation, have doubled in size in

financial terms every year.

Figures recently published show that revenues for STC as a whole nated the high speed market in 1979, and they dominate it now.

during the second quarter of this year increased 26% to over \$270 979, and they dominate it now.
On November 26, 1980 all of million compared with the same



and the outright cancellation of others. The stated response to introduction of "several new marketing programs" and a "reduced production of selected products". All this may well, of course, have had some bearing on the future of the laser printer, which

name of the Lazerpage/18. Certainly the UK as well as the European marketing wings of STC are reluctant to discuss the likelihood of the machine ever appearing. Clive James, UK marketing manager, said: "The situation at the moment is that before we sink our inveatment in laser hnology we must complete a

"Don't worry — it only needs o minor odjustment."

full examination of the market." At this stage nobody is prepared to admit that plans for the printer have been dropped. At STC's European headquarters in London Geoff Benjamin, a financial director of the company and a former member of Documation's management team, insists that the Laserpage/18 would not have aurvived this long had not STC acquired the ompany which developed it.

"Documation's printers were and are good, reliable products", niamin. This was partly why STC bought the company. So why had Documation fared sn badly? "Management", according "Management", according to Benjamin. "Documation's lanagers were over-ambitious. The company over-extended itself

n its manufacturing base." The European plant which Do-umation owned at Finglas, Dubnot only the Impact printer range but also STC's tape and disc products. "Documation only used 20% of the Finglas base," said Benjamin. "The company could have restructured itself to cope with its financial position at the time. But shortly before the merger the joke among Documation's employees in Iraland was that the paint shop was so vast that British Leyland could put a fleet of cars

customers will never require laser printer," he said. through it."
STC's ottitude to Documation is fully: "STC likes to be its eflected in its attitude to the laser utto a market. This one is that occupied by IBM, Rank Kett and the others. STC feel. STC as a company secs no need for daveloping a machine which runs at 27,000 lines per minute. perhaps, that there is no room,

STC's marketing manager in Europe, Colin Cook, is anxious to deny that the company has apent as much on research and deahead. Documentation's last

He described the Laserpage method as "reprinting "Who needs all that inormation in printed form? Data in these quantities could be accessed through terminals," he explained.

This questions the need for laser

Gordon Swartzfager, victorio dent of communications in the company beadquarters in Law ville, Colorado. "We probable not produce it." This questions the need for laser printers at all. Clive James of STC could not recall ever having seen a laser printer running without some form of impact printer acting as back-up. "What is the point of making that kind of financial outlay?" he asked.

The case against the machines was more forcefully put by Ray Saunders, computer development manager with Grieveson Grant and a member of the IBM User Group not produce it."

He seemed to enviser it others at STC, another its its its alower, cheaper and more deals occupying a market nicke distinct occupying a market nicke distinct

and other devices. And that, perhaps, is a mark
Because Documation's Lager
ge/18 was not merely lager
velopment when plans to the state of the shalved. Some where in the a member of the IBM User Group Council. "When I evaluated the shalved. Somewhere in the bourne, Florida, Document bourne, and bourne, Florida, and privately to project abown privately to project abown privately to project customers as long as year to recommend the project bourness of the project b high-speed printer market some high-speed printer market some two to three years ago it was very expensive," he said "There were, for example, the IBM 3800 and the Honeywell PPS — and Honeywell needed special paper. They could only supply print in one colour, and we needed more. The quality of impact printers was good, and so we stuck with them. Besides, I can't justify replacing thirse impact.

would be a bad risk."

The paper quality need not fer appreciably from that meri

by inspact printers and, fute the 3800 can run million of p

printed forms of the type require

for instance, by mail order at

panies. Paper size, paper qui

varied from one run to the man

Laser printers generally a offer flexibility in choice of the

ter sets, pitching and line at

Sperry Univer and ICL to market the Slemens printer:

their own Is bels and specific

Rank Xerox and Honeywell

respective machines, and an

of their receot enhancement

The high-speed, non-ing-printer market is healthy and

mistic, and does not like seriously any threat posed his ters of slower impact machine.

But if the market is health;

also small and highly specials.
Ray Sounders of Grieveson for

chose to remain with STC1 b

pact range because he saw no th

for a larger financial outay. Co Cook of STC agreed. "Some die

well as no need, for a priore it

tion of the machine is not no

have saved from oblivion, is all

the Laserpage/18.

At the top end of the computer market, large IBM-compatible mainframes made by Hitachi, Fu-jitsit and others have been selling Laser printer manufacture deny that these arguments ally ply. IBM's 3800, according i Steve Escott of systems meter well worldwide. The recent in the 3800 group, has a number Japscani" scandal, however (in advantages over impact printed which the PBI has charged execu-tives of Hitschi with stealing nology. Its greater speed (M) lines per minute) mean far i user saves in both floor spect IBM's accrets), may precipitate protectionist feeling followed by power quantity in companion th a multiple impact printer miss

At the opposite end of the market small matrix printers which produce hard copy for microcomouters are almost all made in Ja-Some US and European manu-

JAPANESE computer manufac-turers have a loog way to go on their home ground to ward off competition from the US. Japan is

still a net importer of computer equipment, although Fujitsu re-cently ousted IBM from the

number one position in Japan.
In contrast to her other indust-

ries, Japan's computer manufac-turers have not waited to clean up

the domestic market in the benign

A number of specific market areas have been indentified and stracked in Europe and in the US, in some csses with remarkable suc-

facturers who used to supply these low-cost products to personal comto the Japanese, complaining that without the economies of scale that the Japanese enjoy, production costs are too high. This is a curious argument, because the Japanese must have started from the point of zero productuon where there are

oo economies of scale. More convincing is the parallel that can be drawn between the production techniques used to produce consumer electronic items such as televisions and video cas-

used to make simple peripherals.

A revealing demonstration of this is to be found in the example of C. Itoh CT-101 visual display unit. This screen clearly competes with one of the few de facto standards in computer terminals, the Digital Equipment VT-100. Des-pite the fact that the CT-101 was designed by some American aggi-neers and it is marketed worldwide by a US-based trading company, It

is made in Japan.
What is interesting about the manufacturing plant is that it was previously used to produce colour televisions. This suggests that C. Itoh is using consumer electronics techniques to make this computer

The Japanese rarely take the nsk of trying to open up a market for a completely new type of computer product, but if the parallels with the coosumer electronics industry are significant, this could change Perhams a computer product. change. Perhaps a computer version of the hugely successful Sony streets in a few years' time. For the moment, however, the Japanese are playing it safe.

Japanese companies have re-fined existing designs and used their superb manufacturing skills in making low-cost matrix prin-ters. The microcomputer was born in the US, but you will probable in the US, but you will probably find a Japanese printer with an Apple micro these days.

Centronics was the US company with the biggest stake in this kind of high-volume, low-cost product. It has found the Japanese products very difficult to compete with, and it seems to have withdrawn from the market a little sooner to lick its wounds. Now that Control Data has bought a big share in the com-pany, Centronics may return to compete vigorously by offering a restructured product lina, but the very bottom end of the market is likely to be shared between

likely to be shared between com-panies such as Epson, Oki and Sie-kosha – all Japanese. steadily growing company with the help of a change in strategy. Anadex was one of the first com-The standard printer to be supplied with the IBM personal

for this market, ceased produc-tion. Another established model, Epson wears the laurels of market leader in the UK and the US.

Epson UK claims to have 65% "of the market." Although it is difficult to define clearly the market for a particular three of product clearly it has lost the appeal it had when it was launched. It was then some wsy ahead of the competi-

for a particular type of product, this figure claimed by Epson gives an idea of the company's domi-nance of the market for matrix printers with speeds of up to 100 c baracters per aecond (chps). Epson has achieved the lion's share by selling about 4,000 units per Epson's arch rival, Oki, has a

When will the Japanese invade?

slightly different story to tell. As its came suggests this company is printers at the plants of its US suhsidiary, Okidata. Unlike Ep-son, Oki sells exclusively through a UK-owned distributor into the UK market. The company that has secured this deal is X-Data of

PRINTERS AND TERMINALS

Slough.

X-Data recently celebrated the sale of the 10,000th Oki printer in the UK. Most of these sales were of the low-cost matrix printer, the dicroline, which accounted for about 85% of the total. This product is seen by many as the direct competitor to the Epson products and X-Data puts Oki in close second place for market share with 25% to 27%. X-Data claims Epson accounts for 30%.

Part of the explanation of the disparity between the two com-panies figures may be that X-Data usea a broader definition of the legitimate market to include some faster and more expensive Oki line printers. X-Data emphasises th differences rather than the similarities between the two con panies' products.

While companies like Epson, Oki and C. Itoh are determined to have their low-cost printers selling like hot cakes from every High sette recorders and those that are interested in attacking the

minicomputer OEM markets.

This electronics and computer giant has a small, recently established aubsidiary in London which is marketing a very limited number of the parent company's computer products in Europe. These range from the Facom IBM. Winchester disc drives to medium speed matrix printers.

Fujitsu'a daisywheel printer being sold through distributors, s but the company would like to se cura substantial OEM contracts t have these printers incorporated into small business and word processing systems. The cost o the printers starts at over £1,00 and Fujitsu has made a clear decl sion not to move into the very lo end of the market.

Further up-market, Fujitsu has some line printers of speeds from 300 to I,400 lines per minute (lpm) and these will presumably have to panies like Centronics and Contr Data, although it will be some years before the seriousness of the Japanese challenge can be as-sessed. Fulltau will have to build up stable relationships with OBMs, and this can take many months of even years in som

Future product offerings coul include a laser printer which is already selling in the US.

UK printer markets are compa atively new territory for the Japa-nese, but US manufacturers have been selling printers in the UK for a long time. Anadex is one US company which used to sell at the low end of the matrix printer mar-ket, but which has now changed its

As a privately-owned company, Anadez can afford to be coy about its profit figures, but it appears to have remained a successful and

panies to sell its products into the low-cost printer market, but re-

Iapan leads at the low end of the printer market, but has yet to conquer other sectors. Jon Whiteley reports

German company that is feeling the heat from the Japanese competition in low end printer markets, but it is proud to be the only West European manufacturer that is still in the running. The company is committed to keeping its printer manufacturing in West Germany, so it must tailor its marketing to this manufacturing resource.

In keeping with msny West Ger-man companies in other fields, Mannesmann Tally is selling on quality and not primarily on price.

There are some surprises to be found among printer manufactur-ers and distributors. One of these the High Wycombe-based Walters Microsystems and its distribu-tor, Impact Data. Walter's first venture was a matrix printer called the Dolphin. This unit contained a apanese mechanism from Seiko only the casing was added by

for which Impact Data has the sole distributorship, is the company's own dealign and is manufactureed at High Wycombe. This includes

the populating of circuit boards with components and the manufacture of chassis and case. Only components such as the ribbon cartridge, the print head and the motors are bought in.

As the model number suggests, the Walters 120 prints at 120chps; it can print to 132 characters wide and it is designed for use with plug-in interface modules (RS232, parallel and IEEE488). The price

f about £400 hrings it into competition with some of the best selling Japanese models, but Im-pact Data is confident that it can take around 5% of the market which suggests production levels of a few hundred per month. The Japanese have not finished

gaining market ahare from older established UK, European and US printer companies, particularly in the mid-range and markets above this. But VDU markets are still companies and a sprinkling of UK

"And if you buy now, sir, we'll translate the instructions while you wait."

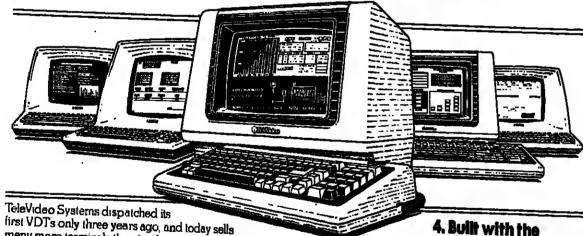
firms who are finding that in-creasing specialisation is often the

tions for the contrast between the high degree of penetration of the Japanese Into some UK printer markets and the low level of pene-tration into screen markets. One of these is that the Japanese are not very good at designing firmware which could have to be reverse

engineered for a complete emula-tion of an established terminal. Another explanation is that both printer and VDU products are originally designed for the Japa-nese market and therefore for matrix printers have.

characters than it is to make the equivalent conversion to printers. will pass the Japanese by. The new

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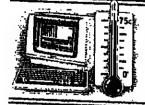


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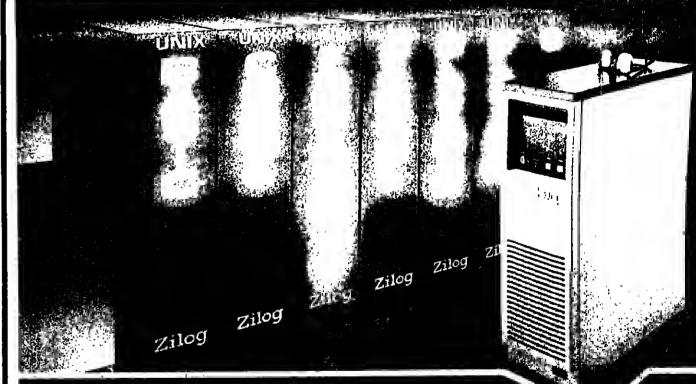
best components.

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TeleVideo Systems, Inc.

Zilog's new System 8000 speaks seven languages - fluently!



Now there's a micro computer that speaks seven high-level lauguages at a price that won't leave you. speechiess The Zillag System 5000

Models itt and 11 are gener ii commisse time-sharing compiders that teature the powerful UNIX operating system, with enhanced System III capabilities. They are especially attractive since all the software needed to make programining more productive is of the highest guality, and is accompanied by superb documentation.

For example, commercial users can select from highlevel COBOL and BASIC business languages; systems tape or floppy disk back-up programmers can select €,

PLZ SYS and technical users PASCAL. A comprehensive range of packages are available mediciting Enuncial modelling, general, accounting and data base -management systems. Inside every System 8000 are the -high performance ${
m MSE}$ components that you have

Z8000 assembler and

come to expect from Zilog. Zilog's new System 8000's. Fach 8-user system is equipped with 256 Kilobytes of parity memory and an 18 Megabyte Winchesterdisk for on line storage. Optional ECC memory and cartridge are offered. From around

£8000 they are the payverti entry level systems that speak UNIX like a mini for

micro prices The pd out more speak to

Zilog (UK) Itd., Zilog House, Moorbrufge Road, Mandenhead Berkshire SL68PL

EXON Corporation Pioneering the Microworld

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PRINTERS AND TERMINALS

Suppliers of dot matrix printers must offer more functions or lower prices . . . Ken Salmon reports

A revolution sparked by multi-function machines

THE time-honoured image of the computer printer has changed little over the years at an initial machines which will produce draft glance. It is still printing letters, numbers and symbols on to endless reams of fan-folded paper, albeit more reliably today than in the

Recently, however, a printer revolution has been quietly taking place. This has been precipitated by the large number of new applicatinn areas being opened up by increasingly sophisticated mini and micro systems.

It now appears that the days of the simple printer, capable of printing only simple alphanumer-ics are numbered. A whole new the simple printer, capable of printing only simple alphanumerics are numbered. A whole new generation of printer producta is available to complement the multifunctional nature of today's computer products.

After all, is it really necessary to purchase both a daisy-wheel printer for final copy and a serial dot

A whole new high quality print produced by a daisy-wheel and who are ready to purchase the low speeds of such devices. But it is now becoming difficult to discern without the use of a magnifying glass that dot matrix correspondence quality is, in fact, dot matrix. The dual-purpose data

copies at about 400 characters per space of a single machine has well and truly arrived.
There will, of course, be those

There will, of course, be those

space of a single machine has well and truly arrived.

This is only a part of what is now being called multi-functionality. Hand-in-hand with the ability to print high quality correspondence characters may a whole host

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dence characters goes a whole host of paper handling facilities such as automatic front-feed devices and happer-based sheet feeders to enable single sheet letters to be handled effectively and efficiently.

Many of these single sheets are pre-printed with logos and other paraphernalia, and it is sensible for the printer printer where while for the printer prints these while it is

processing/correspondence quality dot matrix printer at the price of single machine and occupying the space of a single machine has well

printing the main copy. In fact, most dot matrix printers of the new generation are capable of graphics printing in one form or another, so providing the user with the choice of walks are printed.

... • • • • • 201-224444

Some dot matrix printers offer OCR characters, but can they improve on current rejection rates? which means the computation and

There is a lot of activity in the field of graphics, and it may be significant that 15 leading com-panies, among them DEC, Tektro-nix, Intel, ICL and Mannesmann-Tally, have adopted two new graphics atandards based on ISO

Businesa graphics can be aignificantly enhanced by introducing One of the latest industry buzzcolour into the output. This is a function that dot matrix printers words is "business graphics" are well suited to. Two-colour printing in black and red has been around for many years, but only recently has four-colour printing been available with red, blue and green in addition to black.

When one thinks about the way n which colour images are formed dot matrix technology can offer is

through mountains of figures.

realised.
Another area to which dot matrix technology can be applied is in producing optically-readable data. There are two major systems in widespread use - barcodes and OCR characters. Printers exist which will produce barcodes and OCR characters in addition to nor-

mal printing.

Much of the above refers to the lexibility and multi-functionality serial dot matrix printers printers with a single head moving horizontally across a sheet of paper. But dot matrix-based ine printers have been available for some time, and it is well within the capability of a 600 line per minute line printor to offer dual data processing/correspondence quality printing, graphica, host-defined aymbols loaded into the printer through the Interface from the host, colour and variable density plotting as well as barcodea and so

visual representation of business ter has therefore changed at trrespective of whether i und statistics. These are presented in a clear and conciso manner to enable one to grasp information in picture printer, a medium-ind form rather than having to plough printer or a line printe, le functionality can be offered a

nut significant additional and Ergonomics is playing 1 ich cantly larger influence nor it design of products that are increasingly used out of or puter room environment. office environments they men at noise levels well below that office typewriter. Ease of operation is not

prerequisite in today's offeril simple forms and power or bons for use not only in white rix printers but also at

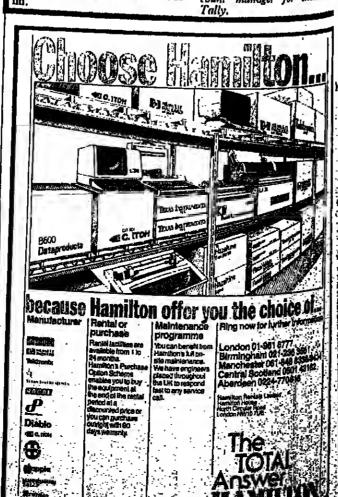
The reliability of printer) been improved immeasurable recent years, particularly 62 mure innovative major men turers have consolidated to nechanical devices and mude plussis is now placed upon her vices bility of these machine

There is also a prerequisited days for avoiding prevail sophisticated diagnostic care into machines to enable sinks

vicing by replacing modula. In conclusion, today's data rix printer is a highly sophist multi-functional device profit the user with a variety of faces many of which can be incoport

in the same machine.

Ken Salmon is Southern and count manager for Manual Tally.





The Bowe 308 guillotine from Alacro.

'34% more throughput'

A GUILLOTINE, the Bowe 308, 308 include margin trimmers for separating computer stationery remove the sprocket holes; a into individual sheets is announced centre cutter for slitting the comby Alacra. The Bowe 308 is a mid-range model, replacing the Bowe 303 which has sold 4,000 units since its introduction in 1974. The 308 will operate at throughputs of between 10% and 34% more than

depths from 1/6th of an inch to 16½ inches in 1/6th inch incre-16½ inches in 1/6th inch increments, the depth being selectable by the user. The width of the continuous web can be up to 510mm.

Accessories available on the Böwe

16½ inches in 1/6th inch increments, the depth being selectable by the user. The width of the continuous web can be up to 510mm.

Accessories available on the Böwe

Price of the Böwe 308 guillotine is £4,995.

Alacra (CW), Iveagh Avenue, North Circular Road, London NW10 7UJ. Tel: 01-965 9311.

between 10% and 34% more than the 303 depending of form size and application, says Alacra.

The new Bowe 308 will be sold exclusively in the UK by Alacra.

The Bowe 308 can handle form depths from 16th of an inch the control batch-



The WY 100 terminal.

Ergonomic terminal

DESIGN of visual display terminals has been the subject of much controversy recently, particularly among the medical profession, so the announcement of the new Comart VDU, offering a full range of ergonomic features, is an impor-

the ergonomic features, is an impor-tant event, claims the company.

The WY100, developed by
Wyse Technology is a powerful,
full feature, low cost terminal.
Some of the more important ergo-nomic features include a fully ro-taing and tilting display, which is
adaptable to individual require-ments and a 12 inch green phos-phore screen, to reduce eye strain.

Comart Limited CW. Little

Comart Limited (CW), Little End Road, Eaton Socon, St Neots, Camba PE19 3[G. Tel: (0480)215005.

Lamp kills bugs in a/c

A BACTERICIDAL lamp intro-duced by Hanovia is designed to oliminate any possibility of bacte-ria and viruses being transmitted through air conditioning systems or barbouring in ventilation duct-ing in offices or factory buildings.

There is growing concern the such as flu, may be connected with

To combat this problem, Hano tion ultraviolet lamp. Hanovia bactericidal lamp la specifically de-signed for installation in air conditioning ductwork and retrofitting to existing ducts is simple accord

ing to the company.

The unit consists of a tubular,
560mm long ultraviolet lamp and
an electrical control box which is fitted outside of the duct. Coo running, the lamp is mounted on a pre-drilled backplate/reflector vis spring connectors. The high tenoperates on a atandard 240V input and supplies the lamp through lan

Cables.

Ultraviolet light is emitted by the lamp at a specific wavelength of 254nm. This spectrum of UV radiation will positively kill or inactivate all types of micro-organisms leads the control of the control and moulds, saya Hanovia. Whether one or several lamps are required for effective air sterilisa-tion will depend on the duct di-mensions and air flow rate.

Hanovia (CW), 145 Farnham Road, Slough, Berkahire

Ramtek raster display costs 35% less

A DISPLAY system that uses a 16-bit microprocessor to offer high-resolution, high performance colour graphics and imaging capa-

The RM-9460 display system offers all the features of Ramtek's RM9400 family but is priced starting at 35% less, says the cor-

Ramtek's first 16-bit-based system, it utilises the MC68000 CPU and 64K RAM technology to achieve greater performance in a smaller, less expensive package.

Use of multiple memory processors allows the RM-9460 to perform independent graphics zoom, on multiple workstations. Other features include context switching, image enhancement, entity detection, graphics funcuons, display bst processing, de-

of 1280 x 1024 picture elements (pixels) and up to 32 refresh memory planes. Vector writing speeds are in excess of 16K vectors per second, based on an average vector length of 50 pixels. The system can display up to 1.3 mil-lion colours simultaneously from a

palette of 16 million.

Like other members of the RM-9400 family, the RM-9460 allows

for a broad range of graphics and imaging applications. Ideally suited for such applications as CAD/CAM, VLSI design, command and control, image processing process control and manning. sing, process control and mapping, the RM-9460 also can be used for multi-apectral imaging applicadevices.

devices.

many types of sophisticated research programs.

devices.

Ramte
House,

Current users of Ramtek's Z80-

clude general purpose keyboards with up to 40 function keys, joysticks, trackballs, light pens, digiting tablets and digital mice.

The RM-9460 offers resolution

The RM-9460 offers resolution

The card is priced at £5,220.

The card is priced at £5,220.
In addition, a Z80-based version of the RM-9460 is being offered for RM-9400 users to protect their that runs on the eight-bit

user price in the 18-20 thousand range, for a $1280 \times 1024 \times 8$ plane system, with significant discounts for volume purchasers and OEMs. The 9460 is deliverable 60 days

after receipt of order. Ramtek is a pioneer in the design, development and manufac-ture of colour graphic computer displays for graphics and imaging. The company also offers indust-

Rantek UK (CW), Times House, Station Approach, Ruis-lip, Middlesex HA4 8LE. Tel: (08956) 76211/2.

Fireberd takes off

CODEX (UK) has announced the launch of another new instrument in the Fireberd series of digital error analysers used for checking out data communications net-

Fireberd 2000 features the most flexible data interface system on the market, ssys Codex. It has 13 popular interface module options allowing the instrument to operate from low speeds (100 bps) to the much higher 10Mbps. Versatility such as this allows a single Fireberd 2000 test set to be used for all data circuit testing applications. Importantly for the UK markot, the Ascü interface for the RS-232 output printer is incorpoand printer controls as standard.

nalyais to check comminications link quality; long-term testing with printout for isolating difficult communications circuit problems; and identifying terminal equipment problems as against en mui

nications equipment problems.

Codex (UK), (CW), 114/116
Thornton Road, Thornton Heath, Surrey CR4 6XB. Tel: 01-

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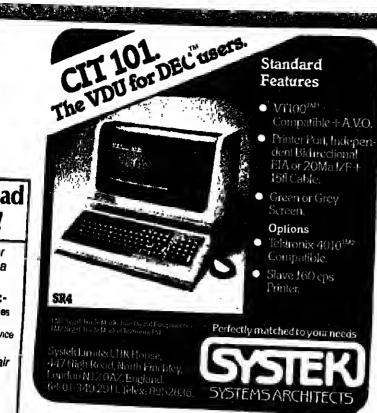


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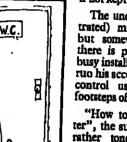
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(hardback). Century Publishing Eye. ist Martin Honeysett, whose work has appeared in Puoch and Private result is a hilarious collection of situations which are only a fraction

topical and penetrating cartoons by the well-known media cartoon-

THIS is a superb book of witty, topical and penetrating cartoons human foibles and weaknesses, but is also merciless in exploiting

Telephone Rentals is...



"How to survive your compu-ter", the sub-title of this book, is rather tongue-in-cheek, because Honeysett has endowed his computers with endearing human characteristics. An emaciated per-sonal computer sitting in the kit-chen is said to be the the result of a housewife's diet programs, and an exhausted television set has been

Electronic Digital PARX

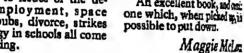
if not kept under control

The undertakers cartoon (illus trated) might seem far-fetched, but somewhere in the country there is probably an undertaker busy installing a home computer to ruo his secounts system, and stock control usually follows in the footsteps of ledger systems.

> Mrs Nisbitt, we've had no end of trouble since we installed a computer in the office." The book covers all aspects of the technological revolution, including video, telephone ans-wering systems and viewdata, and

relates them to issues of the decade. Unemployment, space

An excellent book, and on:



Some old A valuable favourites re-issued

Writings of the Revolution.
Selected Readings on Software Engineering. Edited by E.
Yourdon. 460pp. Yourdon

Yourdon's earlier collection, Classic in Software Engineering (Yourdon 1979). It consists of 25 republished papers, selected by Yourdon and divided into seven sections, each with a short summers, introeach with a short summary intro

Any collection of this type mainly reflects the background and preferences of its editor. Your reviewer found a number of old favourites here, some new material and a few surprising omissions; a number of less familiar contributors rub shoulders with such authors as Belady, Dijkstra, Hoare, Knuth, Lehman, Parnas and Wirth.

As one would expect from such a list, there is some fine material here to justify the somewhat extravagant title. However, the collection is highly selective, and necessarily so when it deals with a wide range of topics, from analysis and design techniques, through proofs of program correctness, to project management, metrics and

As a representative introduction to the technical literature over such a wide field the volume has much to commend it. It is well unfortunately lacks both an inte-grated list of references and a gen-

Peter Wallis University of Bath

aid to software production Software Configuration M

ment. J. K. Buckle. 12 Mac millan 1982. 111 (hardback), £5.95 (papels) ALTHOUGH there are u trative detail of organisms software projects. This is in that Buckle has chosen to it.

are applicable in almost miss

rather tedious reading. many valuable ideas are neith veres with the book is me in new ways of improving effectiveness as a result.

Distributed DP trend

Distributed Database Manage-ment Systems. Olin H. Bray, Lexington Books, ISBN: 0-669-03396-0, 163pp.

THIS book by Olin Bray is in-tended to provide an introduction to distributed database manage-ment systems (DDBMS) and to point out some of the current areas of development and research. The text is oriented towards DP practitioners and students — particu-larly those having some back-ground knowledge of databases.

The work is divided into 10 chapters. Following a brief intro-duction, Chapter 2 discusses the

communications is particular relevant since is present discussion of the recent

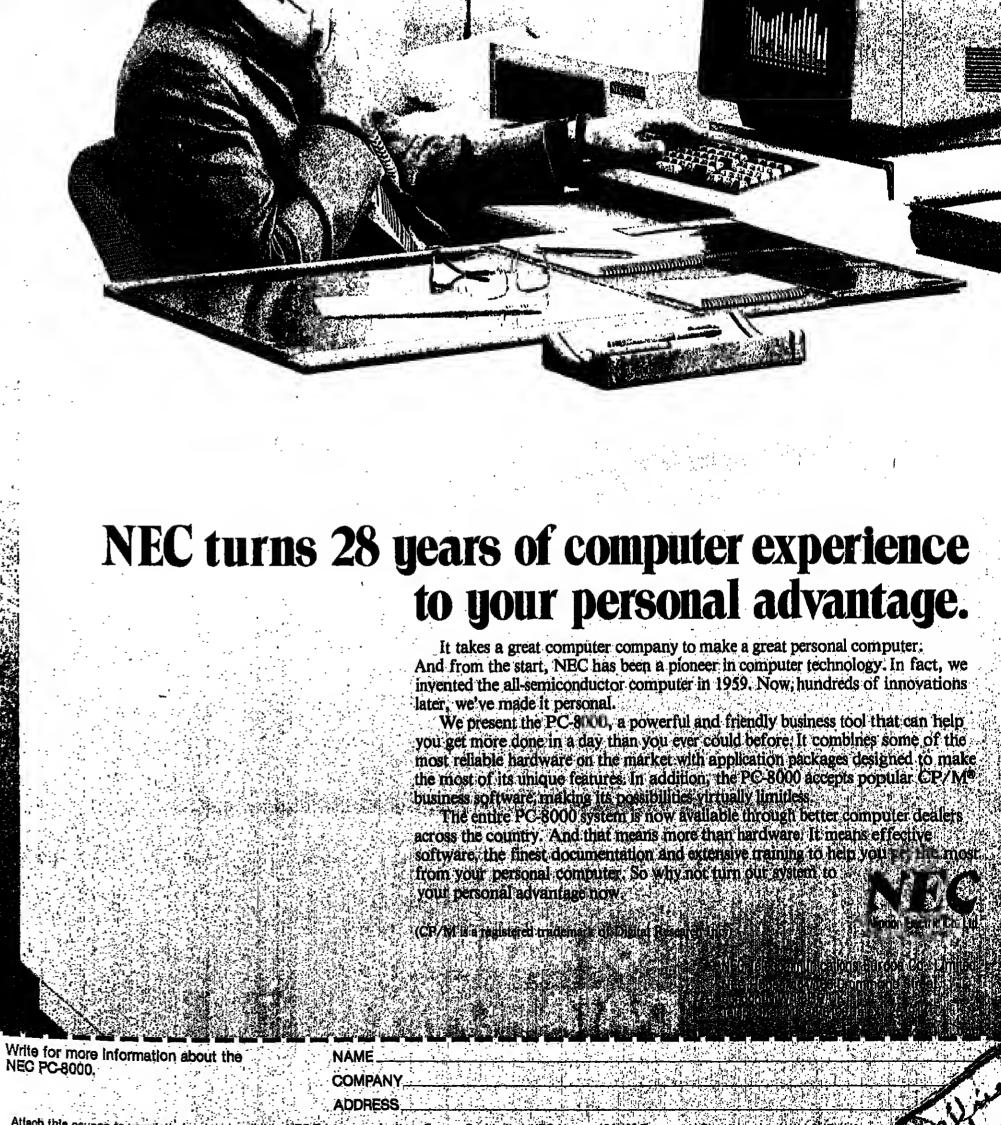
Those who use this bot find it well organised and read. They will also like ography of interest



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You wifl probably be a graduate with a degree in Physics. Moths or Computer Science, hopefully with a higher qualification (M.Sc. or Ph.O.) and all least 3 years' work experience including some of the following:- programming in o high level language: micro processors; statistical analysis; systems design. If you can communicate well, demonstrate initiative and feel you have the potential to lead a learn, then we will see you achieving project responsibility in the system

MATHEMATICIAN/DESIGNER

Again this will involve client confact - taising on the design, evaluation and selection of signal processing algorithms. You will evaluate alternative algorithms, prove the mathematics of the recommended solution and talse closely with the project leader at the software group on its incorporation into the finalised software

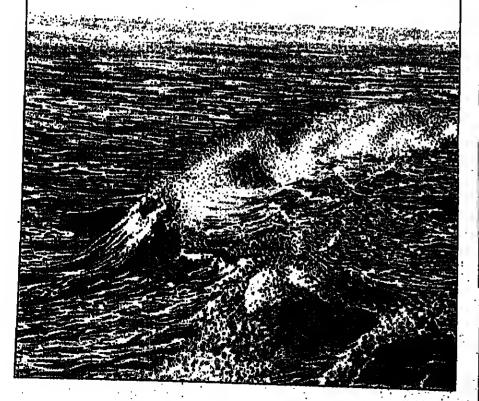
You will be a graduate, ideally with a Ph.O. in a mathematical aspect at a physical science idealty with camputer programming experience (Coral 66 or Fortron) and some work experience in some of the following areas:-signal processing analysis, mathematical modelling.

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In the early 1970s, the Irish lodustrial Development Authority (IDA)
recognised the electronics industry as
offering major growth prospects for
investment and employment. Following an aggressive marketing campaign to attract some of the world
leaders in the industry to set up
manufacturing plants in Ireland,
electronics has now expanded to the
point where Ireland is often referred
to as the "SILICON VALLEY" of
Europe.

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A good appreciation of the developments in the lete-communications field la essential including broad bend technology it possible.

Ideally we are looking for good presentation skills and a person seeking the challenge and eatistaction only to be found in the Sales Support

Training on new davelopments in the D.P. and Tele-communications lechnology will be provided both in the U.S.A, and Europe to enable you to upgrede your current skills.

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MAKING THE WORLD MORE PRODUCTIVE

CAPITAL GRANTS:

yearly appearing on the job market in yearly appearing on the job market in a country where the population is increasing by 1.5 per cent per annum and 50 per cent of that population is under the age of 25. A wide range of non-repayable cash grants are offered by the IDA to Software and Data Processing companies. These grants are given to cover the cost of fixed assets includ-The IDA has reacted to this new found change of emphasis from Hardware to Software by introducing Hardware to Software by introducine an incentive programme to encourage Software development and Data Processing companies. A comprehensive national effort has been made including education of Personnel, Oevelopment of Telecommuoications, an ettractive Tax Environment, Grants, Research and Development Facilities and the setting up of Business parks for service type industries.

Hardware to Software by introducine an incentive and incentive and several service in growing computers, essential office furnities and ecomposition, whether purchased or leased. Where leased, the percentage grant is given as a rent authority and the service in growing and the service in cover the cost of fixed assets including computers, essential office furnities and accommodation, whether purchased or leased. Where leased, the percentage grant is given as a rent authority for the first 5 years.

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Due to the favourable tax environment, the Irish banks can offer loan finance at low interest rates.

To qualify for all these incentives,

Altergo (Ireland) Limited: Computer Ancillaries Ltd(CAL): Distributive

Previously IDA grants had been aimed mainly et manufacturing indostries. While these facilities are at ill help promoted ea actively as ever, a new scheme of incentives for service industries, which include Data Processing and Software development, were introduced.

Companies must be export orientated and potentially shie to create at least 20 jobs.

ALRADY IN IRELAND:

Some of the Software development and Data Processing companies already operating in Ireland which have been grant aided by the IDA include:

This IDA incentive package in-

EMPLOYMENT ORANTS Cash grants payable on the jobs created. These grants ere negotiable and can vary with the characteristics

THE SILICON

VALLEY OF EUROPE

Europe.

17 of the top 100 U.S. electronic companies now have factories in Ireland. Such well-known names as Digital, Mostek, Amdahl, Wang, Apple, General Electric, Westinghouse, Storage Technology and Perkin Elmer are firmly established in Ireland. From Japan came Fujitsu and Nuppon Electric and Nindorf from Germany. Products range across the spectrum of Mini and Main-Frame computers: Microprocessors: Medical and Scientific Instruments: Consumer Electronics: Process Control Equipment: Printers and Telecommunications Equipment:

1985 output of the Irish electronics industry will exceed IR pounds, 1,200 million and the current employment level of over 15,000 will have doubled by the middle of the deads.

SOFTWARE GEOWING
So far we have been talking about the
Hardware side of electronics. But
Software is dramatically growing in
inportance within the Data Processing and computing industry. As
Hardware costs decrease with mass
production, the complexity and cost
of Software is growing. The importance is also growing and with it the
need for large numbers of trained and
skilled staff.

Increased use of high-level computer languages, the development of structural programming techniques and the introduction of wired stan-

dard programmes for mass-produced Software has helped to simplify mat-ters. All these solutions, however,

depend on people for their success,

PER CENT UNDER 25: And people are exectly what Ireland has to offer, A well-educated, Eng-lish speaking youthful workforce is

SOFTWARE GROWING

FROM THE U.S. TRAININO GRANTS:

Up to 100 per cent of the cost of an agreed training programme for staff in new service industries. The grants

Caci (Ireland) Limited: Micropro (Ireland) Ltd: Inslau Burope Limited: Conserv Ireland: Four Phase Oversess Corporation: Informatics General Corporation.

can cover the cost of sending staff abroad for training: The Salaries, travel and subsistence expenses of training personnel and certain Company: Memory Irelan Projects of training personnel and certain Company: Memory Irelan Com Briceson Programmetic (trelend)
Limited: The European Software
Company: Memory Ireland Limited:
Mentec International Limited. training courses geared to meet parti-cular needs. These service type industries are un-

FAVOURABLE TAX ENVIRONMENT:

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ENVIRONMENT:

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This low corporate tax rate is particularly attractive tax rate is particularly attractive tax rate is particularly attractive.

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CW 37/1

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PROGRAMMER/ANALYST

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AN./PROGRAMMERS & ANALYSTS

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C4084

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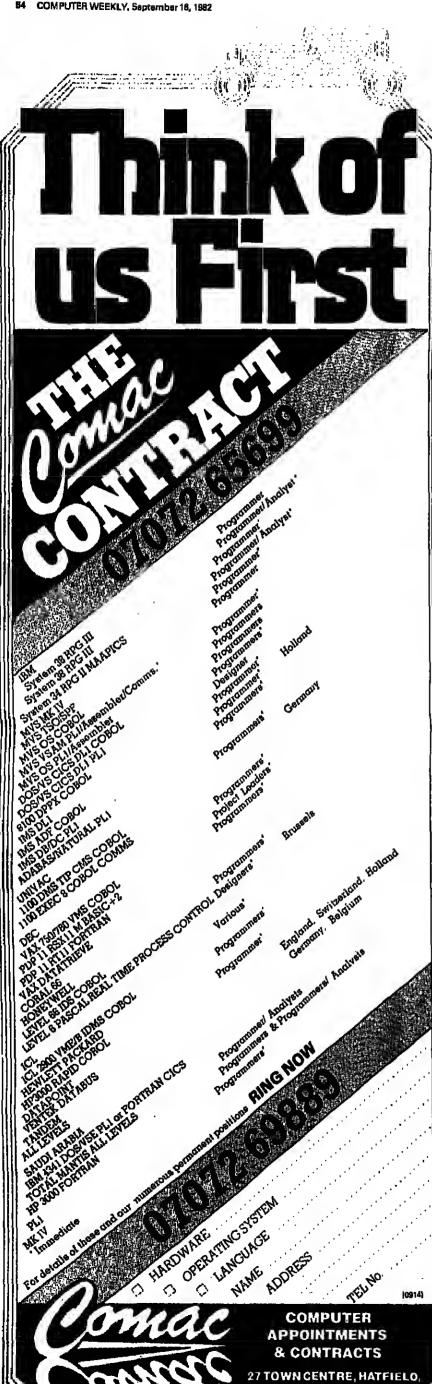
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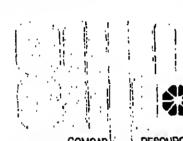
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